



Leibniz's
Metaphysics
ITS ORIGINS AND
DEVELOPMENT

CHRISTIA MERCER

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Leibniz's Metaphysics

Its Origins and Development

This is the first systematic study of the development of Leibniz's philosophy. By placing his vast writings in their proper intellectual context and by analyzing unnoticed early works, Christia Mercer shows that Leibniz developed his philosophy much earlier than previously believed and for reasons that have not been recognized. *Leibniz's Metaphysics: Its Origins and Development* offers a major reassessment of Leibniz's thought. It will engage philosophers, historians, and scholars of religious studies.

For too long, the history of early modern philosophy has been a tale of tidy progress according to which Leibniz developed his metaphysics primarily in reaction to the old scholasticism and the new Cartesianism. *Leibniz's Metaphysics: Its Origins and Development* shows that this story is inaccurate. By uncovering a German school of conciliatory eclectics who trained the young Leibniz, Mercer places his early texts in an entirely new light. By excavating Leibniz's long-hidden views about substance, God, and method, Mercer exposes for the first time the underlying assumptions and ultimate goals of his philosophy. It becomes clear that Leibniz's relation to Descartes, Spinoza, and other major seventeenth-century thinkers is significantly different than previously thought. This study will compel scholars to reconsider many of their assumptions about early modern science, theology, and philosophy.

Christia Mercer is an associate professor of philosophy at Columbia University.

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Its Origins and Development

CHRISTIA MERCER

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*For Tommy George and Wanda Jo:
Yippie-ki-yo-ki-yey*

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The second book was conceived during a second lengthy research trip to Germany, this time supported by the Alexander von Humboldt Foundation. Although I had returned to the Leibniz Archives to prepare the thesis for publication, in my attempt to answer some questions that remained from my earlier research, I discovered Leibniz's youthful Platonism and the Platonism of his teachers. With this recognition, I was forced to rethink everything but the core of my original interpretation. Chapters 5 through 10 of the book are based on the research funded by the Humboldt Foundation, some of which took place in Oxford. My colleague at the University of Oslo, Eyfi Emilsson, has greatly helped me grasp the rudiments of Plotinian metaphysics, while Sarah Hutton has enlightened me on matters concerning early modern Platonism more generally.

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References to Leibniz's works

My primary source is *Gottfried Wilhelm Leibniz: Sämtliche Schriften und Briefe*, ed. Akademie der Wissenschaften, Berlin: Akademie Verlag, 1923. I abbreviate my references as follows: capital roman numerals = series number; lower case roman numerals = volume number; arabic numerals = page number. Because the fourth volume of series six is itself three volumes (A, B, C) and because the pagination is consecutive, there will be some citations in which the page number is more than three digits. For example, VI iv [B] 1444 = series six, volume four (part B), page one thousand four hundred and forty four. Each text in each volume of the Academy edition is numbered. When I refer to a whole text as opposed to only part of it, I sometimes refer to it by its number. For example, Leibniz's thesis, *Metaphysical Disputation on the Principle of Individuation* = VI i N.1.

Leibniz published very little during his lifetime. To distinguish between published and unpublished works, I capitalize all the words in the title of the published ones and only the first word in the title of unpublished ones.

Abbreviations

AG: *G. W. Leibniz: Philosophical Essays*, eds. Roger Ariew, Daniel Garber, Indianapolis: Hackett, 1989.

AT: *Oeuvres de Descartes*, eds. C. Adam, P. Tannery, 11 vols., Paris: Vrin, 1996.

CSM: *The Philosophical Writings of Descartes*, 2 vols., eds. J. Cottingham, R. Stoothoff, D. Murdoch, Cambridge: Cambridge University Press, 1988.

Dutens: Leibniz, *Opera Omnia*, ed. L. Dutens, 6 vols., Geneva: De Tournes, 1768; repr. Hildesheim: Olms, 1989.

G: *Die philosophischen Schriften von Leibniz*, ed. C.I. Gerhardt, 7 vols., Berlin: Wiedmann, 1875–90; repr. Hildesheim: Olms, 1965.

GM: *Mathematische Schriften*, ed. C.I. Gerhardt, 7 vols., Berlin: A. Asher, 1848–63; reprinted Hildesheim: Olms, 1962.

L: *G.W. Leibniz: Philosophical Papers and Letters*, ed. Leroy E. Loemker, 2nd ed., Dordrecht: Reidel, 1969.

Pk: *G.W. Leibniz: De Summa Rerum, Metaphysical Papers 1675–76*, ed. G.H.R. Parkinson, New Haven: Yale University Press, 1992.

W: *Leibniz: Selections*, ed. P.P. Wiener, New York: Scribner's, 1951.

Translations

My policy is to cite the primary source and, in those cases when there is a translated version of the passage, to cite the translation after a colon. As a translator, my goal has been to stay close to the original text and to include Leibniz's capitalization of key terms. Therefore, I have often deviated from the translation cited. In cases where the original language is very unclear, I have attached an original language quotation to the citation in the note. Biblical quotations are from the Revised Standard Version.

Introduction: First truths and half truths

In October 1687, Leibniz set out from his home in Hanover for an extended tour of Germany, Austria, and Italy. His official duty was to research the history of the House of Brunswick; his personal desire was to effect religious and political peace in Europe. He visited public archives and personal libraries; he conversed with politicians, monks, and cardinals. Besides historical research and peace proposals, he was engaged in other projects as well. During his residence in Vienna, for example, he met with the Austrian emperor to whom he recommended, among other things, the reorganization of the economy, the formation of a general research library, and the establishment of an insurance fund; he worked on proposals for instituting an Imperial College of History, for reforming the coinage of Austria, Brunswick, and Saxony, and for lighting the streets of the city; and he wrote a paper on motion, which he later published in one of the leading journals of the time.¹ Leibniz liked to keep busy. It was in the midst of such a startling array of activities that he produced one of his most famous texts, a short paper entitled *First truths*.² Composed on Italian paper, *First truths* was written during the months following his year-long stay in Italy (March 1689 to March 1690).³ That Leibniz would find time during his research and travels for a concise summary of his metaphysical principles is noteworthy, as is the fact that the text makes no reference to any of the other prominent activities in his intellectual life. It stands, in its four-page entirety, as a brief presentation of his most basic philosophical principles.

In this book, I offer the first systematic account of Leibniz's philosophical development. Some of my conclusions are historically startling. For ex-

1. Leibniz's proposal for lighting the streets of Vienna was implemented. I iv 391f: E. J. Aiton, *Leibniz: A Biography*, 150.
2. The majority of Leibniz's most important writings were not published during his lifetime, and there remains a good deal of confusion about the history of the publication of his works. For example, Anthony Kenny claims in the *Oxford Illustrated History of Western Philosophy* that the *Discourse on metaphysics* was Leibniz's "earliest" publication (152). In fact, the *Discourse* was not published during Leibniz's lifetime and, if it had been, it would not have been among the earliest. To distinguish between published and unpublished texts, I capitalize all the words in the title of published works and only the first word in the title of unpublished ones.
3. The Academy editors give the piece the date of 1689. See VI iv [B]1643–44. Although the editors have entitled the work *Principia logico-metaphysica*, I will retain its standard title, *First truths* (*Primae veritates*) here.

INTRODUCTION

ample, I claim that original versions of both the complete concept theory of substance and the doctrine of Preestablished Harmony were in place when Leibniz went to Paris in 1672 (that is, fourteen years before the composition of the *Discourse on metaphysics* and at least seventeen years before his *First truths*); that many of Leibniz's most basic philosophical views evolved in an attempt to solve specific theological problems (e.g., those of incarnation and resurrection); and that the source for some of the most important of these doctrines (e.g., Preestablished Harmony) was a version of Platonism which, though not recognized by scholars, was extant in seventeenth-century Germany. Other conclusions are philosophically surprising. For example, I argue that underlying Leibniz's metaphysics is the belief that each substance contains the essence of God which means, among other things, that God is both the unity and the diversity in the world.

Nor is that all. One of the basic assumptions behind my interpretation is that we will not discern key aspects of Leibniz's philosophical system unless we acknowledge that it was constructed to effect intellectual peace. Seventeenth-century philosophers often had grand ambitions. In 1641, Descartes announced that one of the goals of his *Meditations on First Philosophy* was to construct a new and firm foundation for the sciences. As he put it in the first *Meditation*, he intended "to demolish everything completely and start again right from the foundations" in order "to establish something in the sciences that was stable and likely to last."⁴ When Leibniz wrote the *First truths* in 1689, his goals were even more far-reaching. His first truths were supposed to effect a new world order. That Leibniz intended his metaphysics to constitute the foundations for philosophical, theological, and political peace seems odd from our twenty-first-century perspective, but Leibniz was entirely sincere in his conciliatory effort. The metaphysics of the *First truths* is the result of a brilliant melding of ideas from a stunningly diverse group of sources. Leibniz's goal was to bring about intellectual peace by constructing a true metaphysics built out of the materials of the noblest philosophical traditions. His elaborate attempt to combine doctrines from philosophers as diverse as Plato, Aristotle, and Descartes while solving the great theological and philosophical problems constitutes an unnoticed aspect of his brilliance.

Given the importance of Leibniz to the history of philosophy and given the cherished position that he has held among analytic historians of philosophy throughout this century, it is remarkable that there could be so much to learn both about the basic features of his system and about the underlying motivation behind his thought. Before turning to a summary of this book, it will be helpful to reflect briefly on why we have remained so ignorant about some of the fundamental aspects of Leibniz's thought.

4. AT VII 17; CSM II 12.

I. Half truths

Not only did the philosophy of Leibniz's *First truths* not effect universal peace in the seventeenth century, it did not bring peace to the twentieth-century commentator. For decades, core features of the philosophy presented in the essay have baffled scholars. Even the date of the *First truths* has been a source of confusion. Before considering some of these interpretive problems, it will be worthwhile to review the contents of the text.

Leibniz begins the paper by presenting as his first truths the law of identity, the law of non-contradiction, and his own definition of truth. About the latter, he writes:

the predicate or consequent is always in the subject or antecedent, and the nature of truth in general or the connection between the terms of a statement, consists in this very thing, as Aristotle also observed. The connection and inclusion of the predicate in the subject is explicit in identities, but in all other propositions it is implicit and must be shown through the analysis of notions; *a priori* demonstration rests on this.

Leibniz then asserts: "Many things of great importance follow from these considerations, considerations insufficiently attended to because of their obviousness. For the received axiom that *nothing is without reason*, or *there is no effect without a cause*, directly follows from these considerations."⁵

In the remainder of the essay, Leibniz unpacks the other implications of "these considerations" which include his fundamental metaphysical doctrines: "*that in nature there cannot be two individual things that differ in number alone*;" that "*there are no purely extrinsic denominations*;" that the "*complete or perfect notion of an individual substance contains all of its predicates, past, present, and future*;" that "*[e]very individual substance contains in its perfect notion the entire universe*;" that "*all individual created substances are different expressions of the same universe* and different expressions of the same universal cause, namely, God;" that "*strictly speaking no created substance exerts a metaphysical action or influx on any other thing*;" that the mind-body union and the relation among all created substances is one of "*concomitance*;" that "*[t]here is no vacuum*;" that "*[t]here is no atom*;" that "*every particle of the universe contains a world of an infinity of creatures*;" and that "*corporeal substance can neither arise nor perish except through creation or annihilation*."⁶ Such apparently are Leibniz's first truths.⁷

Independently of one another, at the turn of the century, Bertrand Russell and Louis Couturat developed strikingly similar interpretations of Leibniz's metaphysics and its foundations. Oversimplifying somewhat, according to each, the key to Leibniz's thought is his logic, his concept of sub-

5. VI iv [B] 1644-45: AG 31 \L 268.

6. VI iv [B] 1645-49: AG 31-34 \L 268-70; Leibniz's emphasis.

7. For a brief summary of these doctrines, see Appendix, Part I.

stance proceeds from his logic, most particularly from his theory of truth, and the *Discourse on metaphysics* of 1686, which is supposed to be the first full expression of his philosophy, offers the necessary background to the *Monadology* of 1714.⁸ Russell's arguments were impressive, but the case made by Couturat was even more so. As Russell wrote about his original thesis in the preface to the second edition of his book, its "principal thesis – namely, that Leibniz's philosophy was almost entirely derived from his logic – received overwhelming confirmation from the work of Louis Couturat." According to Russell, although his own work had relied "almost exclusively" on the *Discourse on metaphysics* and the letters to Arnauld, Couturat drew on "innumerable writings expressing the same point of view, which had remained buried among the mass of documents at [the archives in] Hanover for over two centuries."⁹ Among the writings discovered by Couturat, the most important, according to Russell, was the *First truths* to which Couturat had given the date of 1686 and in which:

all the main doctrines of the 'Monadology' are deduced, with terse logical rigour from the premiss: 'Always therefore the predicate or consequent is in the subject or antecedent, and the nature of truth in general or the connection between the terms of a statement, consists in this very thing. . . . Moreover this is true for every affirmative truth, universal or particular, necessary or contingent.'¹⁰

Russell claims that on the basis of such texts, "[n]o candid reader . . . can doubt that Leibniz's metaphysics was derived by him from the subject-predicate logic." For Russell, "Couturat's work afforded conclusive confirmation" of his own interpretation, and went beyond his account to prove, for example, that the identity of indiscernibles is "expressly deduced by Leibniz from the analytic character of all true propositions."¹¹

The Russell–Couturat account of Leibniz's philosophy and its development was enormously attractive: it offered a brilliant interpretation of some very baffling aspects of Leibniz's metaphysics and it told an engaging story about how a mathematician of Leibniz's caliber could produce such an apparently bizarre metaphysics. Russell's vivid description of the revelatory experience that motivated his book, although well-known, is worth quoting at length. Besides the insight the passage affords into Russell's approach, it is amusing to think of the co-author of the *Principia Mathematica* fretting about how to make Leibniz's thought sensible to his Cambridge undergraduates. About his first thorough study of Leibniz's texts, Russell wrote:

In the Lent Term of 1899 I delivered a course of lectures on the Philosophy of Leibniz at Trinity College, Cambridge. In preparing these lectures, I found myself, af-

8. Couturat originally published *First truths* and his interpretation of Leibniz's thought in *La logique de Leibniz d'après des documents inédits* of 1901. He then summarized his position in "Sur la métaphysique de Leibniz" of 1902. For Russell's interpretation, see *A Critical Exposition of the Philosophy of Leibniz*, esp. 18–19 and the preface, 2nd ed.

9. Russell, *Critical Exposition*, v.

10. *Ibid.* In Russell's text, the premise was left untranslated. I have translated it here.

11. *Ibid.*

ter reading most of the standard commentators and most of Leibniz's connected treatises, still completely in the dark as to the grounds which had led him to many of his opinions. Why he thought that monads cannot interact; how he became persuaded of the Identity of Indiscernibles; what he meant by the law of Sufficient Reason – these and many other questions seemed to demand an answer, but to find none. I felt – as many others have felt – that the *Monadology* was a kind of fantastic fairy tale, coherent perhaps, but wholly arbitrary.

Russell's puzzlement about the philosophical motivations behind the *Monadology* encouraged him to further his researches.

At this point I read the *Discours de Métaphysique* and the letters to Arnauld. Suddenly a flood of light was thrown on all the inmost recesses of Leibniz's edifice. I saw how its foundations were laid, and how its superstructure rose out of them. It appeared that this seemingly fantastic system could be deduced from a few simple premisses, which, but for the conclusions which Leibniz had drawn from them, many, if not most philosophers would have been willing to admit. . . . I have . . . endeavoured as far as possible to exhibit the theory of monads as a rigid deduction from a small number of premisses. The monad thus appears, not at the beginning of the exposition, but after a long preliminary chain of reasoning. And it must, I think, be allowed that, if this account be correct, Leibniz's value as a philosopher is very much greater than that which would result from the customary exposition.¹²

The Russell–Couturat story gained enormous prestige. Its elegance inclined scholars to look closely at Leibniz's logical papers and try to discern the precise interrelations among his first truths. Russell was especially outspoken about the superiority of the part of the metaphysics that interested him and the inferiority of the remainder of the system. He insisted, for example, that there was nothing either original or worthwhile about Leibniz's conception of God: "Leibniz, whenever he treats God at all seriously, falls involuntarily into Spinozistic pantheism."¹³ Indeed, it was Russell's contention that the main components of the system did not fit together: "the relation of Leibniz's Dynamics to his Metaphysics is hopelessly confused, . . . the one cannot stand while the other is maintained. . . . As a matter of fact, the want of connection is, I think, quite one of the weakest points in his system." Moreover, as Russell continues, the dynamics is "a mass of confusions."¹⁴ Following Russell's lead, many subsequent scholars felt justified in treating the logical notion of a substance in isolation from the other parts of Leibniz's thought and even from his other descriptions of substance. The article on Leibniz in the *Dictionary of Scientific Biography* offers a striking example of the authority and longevity of the Russell–Couturat approach. At the outset of the section on Leibniz's metaphysics, entitled "Logical Atomism," we find the following, published in 1970: "Since the investigations of Russell and Couturat, it has become clear that Leibniz's theory of monads is characterized by an attempt to discuss metaphysical questions within a framework of logical distinctions."¹⁵ Furthermore, because Rus-

12. *Ibid.*, xiii–xiv. 13. *Ibid.*, 185–86. 14. *Ibid.*, 89–91.

15. Joseph Hofmann, "Leibniz," *Dictionary of Scientific Biography*, vol. 8, 156.

sell claimed that Leibniz had “a good philosophy which (after Arnauld’s criticisms) he kept to himself, and a bad philosophy which he published with a view to fame and money,” it was easy for students of Leibniz’s philosophy to ignore “the vulgarized version” of his thought that he wrote “for cheap popularity” and for “the admiration of Princes and (even more) of Princesses.”¹⁶

In recent years the influence of the Russell–Couturat interpretation has waned. Despite its interpretive elegance, it failed to deliver the goods. After decades of debating the interrelations among the first principles, much of the metaphysics of the *First truths* in particular and the mature philosophy in general has remained mysterious. Although commentators have struggled nobly to decipher the exact interrelations among the first truths, no coherent story has been told that included them all. In short, after years of analysis, scholars have found no subset of first truths that strictly implies the others. But matters are worse than that. Not only has the Russell–Couturat approach failed to account for the precise interrelations among the doctrines, it has left many of them unmotivated and unexplained. For example, scholars have not found in the other “first truths” a plausible motivation behind Leibniz’s claims that “every substance expresses every other” and that every substance “contains” the world; nor have they been able to explain satisfactorily either the unity, indestructibility, or indivisibility of substance. Such features of substance remain as the unmotivated givens of Leibniz’s system. The failure of the approach has seemed all the more severe because Leibniz himself suggests that the elements of his system are tightly interwoven. As he writes in 1710: “My principles are such that they can hardly be torn apart from each other. Whoever knows one well knows them all.”¹⁷

With the publication of more of Leibniz’s papers and with a shift in methodology among historians of philosophy, recent scholars have widened their textual and historical scope and proposed an account of his thought that is based on a broader range of texts and a more thorough understanding of his philosophical interests. By piecing together recent studies of his philosophy, we arrive at the following story: Leibniz rejected the scholasticism of his youth around 1663 and accepted the new mechanical philosophy according to which all corporeal features are reducible to and explainable in terms of the movement of material parts. He remained a mechanist and toyed with atomism while retaining an interest in some aspects of the philosophy of Aristotle during the 1660s. He presented his first attempt at original (as opposed to derivative) metaphysics in his first major publication, the two-part *Theory of Abstract Motion and New Physical Hypothesis* of 1671. A few scholars have proposed that he was an occasionalist during this time and others have argued that during his years in Paris (1672–76) he fell under the influence of Spinoza and was a pantheist, if only for a short while. Some commentators have ignored the obscure details of the early

16. Russell, *A Critical Exposition*, vi. 17. G II 412: L 599.

years and discerned elements of the mature philosophy; others have taken those details as evidence of indecision and immaturity. It is often claimed that during a burst of energy either in the late 1670s or early 1680s (he had invented the calculus and in general worked on mathematical matters in the mid-1670s), Leibniz developed his theory of truth and some of the other first principles of his metaphysics. He is said to have presented these ideas in the *Discourse on metaphysics* (1686) and *First truths*, tinkered with the details of the system in the 1690s, and eventually summarized his mature metaphysics in the *Monadology* (1714). There has been a raging debate about his conception of body in general, about the real extension of body in particular, and about whether he was already an idealist in the 1680s. A few scholars have noted Leibniz's youthful interest in Platonism and eclecticism, but there has been little doubt about the fact that his early years (roughly through his Paris period) represent a period of "confusion and indecisiveness" and that it was during the 1680s that the core features of his metaphysics were put in place.¹⁸

What is perhaps most striking about this story is the fickleness attributed to Leibniz's philosophical personality. It implies that for nearly twenty years the brilliant young man cast about for solutions to the great philosophical problems of his day before arriving at his own response and that, in the meantime, he tried on scholasticism, mechanism, atomism, occasionalism, and Spinozistic pantheism before making up his own philosophical mind. The basic idea is that at some point between the late 1670s and the mid-1680s he "worked out the details of his philosophical system . . . in a concentrated period of thought" and gave birth to his philosophy full-grown.¹⁹ The result was an elaborate set of logical and metaphysical principles. Part of the Russell-Couturat influence lingers here: there has been a tendency to focus on the logical side of Leibniz's thought and to assume that the development of the logic and the conception of truth must stand at the core of the metaphysics and signal its birth. Despite its greater complication and wider textual base, this developmental story sheds virtually no light on the motivations behind Leibniz's metaphysics. By such means, we have returned to Russell's position *before* his revelation: we are again "completely in the dark as to the grounds which had led [Leibniz] to many of his opinions." Neither the decades of analysis nor the more thoroughly researched developmental story reveal the deep interconnections among Leibniz's first truths. Some recent scholars have embraced the implied con-

18. The quotation here is from Catherine Wilson, *Leibniz's Metaphysics: A Historical and Comparative Study*, 2. Full citations to the authors who have contributed to this story will appear in the course of the book, esp. chs. 1, 2, 5, and 10.

19. Nicholas Rescher, *Leibniz: An Introduction to his Philosophy*, 7. Although Rescher and other commentators make statements such as "the rudiments of monadism were conceived by 1675" (7), they seldom explain what they mean. Instead of an account of Leibniz's development, they offer a list of the claims contained in the Paris notes that seem like Leibniz's later doctrines. See, e.g., Rescher's "Contributions of the Paris Period (1672-76) to Leibniz's Metaphysics," and some of the other articles in *Leibniz à Paris*.

clusion. André Robinet and Catherine Wilson eloquently argue that Leibniz developed (at least) two separate and fundamentally inconsistent systems.²⁰

Recently, however, some commentators have tried to motivate the system. For those scholars who see Leibniz as fundamentally rooted in the Baroque intellectual complexity of his time, he was motivated to construct an “architectonic” and synthetic system whose internal complexities and “folds” he found intellectually satisfying.²¹ As one scholar puts it, Leibniz “was a baroque philosopher in a baroque world.”²² For those who approach Leibniz through the maze of seventeenth-century science and mathematics, it is the set of problems that cluster around physics and the continuum that motivates much of the philosophy.²³ According to those interpreters who are willing to take seriously Leibniz’s genuine interest in theological issues, it is the latter that seem to explain the system. For example, Donald Rutherford has recently presented a lengthy and elegant argument showing the central place that theodicy had in Leibniz’s thought.²⁴ The remarkable thing about these stories is that while they are inconsistent with one another, each of them has the ring of truth. That is, every one of these accounts resolves a number of tensions in Leibniz’s texts and makes sense of a part of his system. According to Lewis White Beck, this is not surprising:

Leibniz never succeeded in giving a comprehensive and coherent presentation of his entire philosophy. . . . Nor has any historian of philosophy written a wholly systematic presentation that satisfies others who, with most of the same documents before them, present quite different but perhaps equally comprehensive and consistent accounts. . . . A being of so many dimensions cannot be pictured without a choice of perspectives, and no man has presented as many faces to the historian of philosophy as Leibniz did. It is not to be wondered that historians do not agree about ‘the real Leibniz.’ Leibniz, more than any other philosopher, was all things to all men.²⁵

The interpretation that I offer of Leibniz’s philosophical development borrows from all of these approaches. It endorses the suspicion of many of these scholars that in order to understand “the fantastic fairy tale” we need to know as much as possible about what motivated it. It agrees with the Russell–Couturat assumption that there is a sublime elegance among the first

20. For a good introduction to the difficulties and tensions in the philosophy of the mature Leibniz, and for a survey of some of the literature about them, see Wilson, *Leibniz’s Metaphysics*, ch. 3.

21. See André Robinet’s *Architectonique Disjonctive, automates systémiques et idéalité transcendante dans l’oeuvre de G. W. Leibniz*, and Gilles Deleuze’s *The Fold: Leibniz and the Baroque*.

22. Lewis White Beck, *Early German Philosophy: Kant and His Predecessors*, 202.

23. Independently of one another, two scholars have recently argued that an attempt to solve the problem of the continuum lies behind much of Leibniz’s thought. See Richard Arthur’s introduction to his *The Labyrinth of the Continuum* and Philip Beeley’s *Kontinuität und Mechanismus*.

24. Donald Rutherford, *Leibniz and the Rational Order of Nature*.

25. Beck, *Early German Philosophy*, 202.

truths, but it insists that we will not grasp the elaborate metaphysics of which those truths are a part without a good deal of historical and textual work. It embraces the assumption that Leibniz intended to solve the pressing problems of his day and to build an elaborate and thoroughly Baroque system, but it refuses to consider one problem or influence to the exclusion of others. It acknowledges that Leibniz presented many different faces, but it proposes that each of these draws upon an underlying set of interconnected assumptions. Among other things, we need to take seriously Leibniz's call for intellectual peace and religious insight; we need to recognize his conciliatory eclecticism and to discern the Platonism at its core; and we need to see that the driving force behind much of his work is the belief that God is the transcendent source of everything. According to Leibniz, each creature is divine; the object of human life is to discover this divinity within the world and to perceive our place in universal harmony. The goal of the knowledge that Leibniz would have us seek requires that we understand our place in and relationship to the whole of God's creation. Leibniz was naive enough to believe that once the true metaphysics was accurately presented, it would lead the enlightened soul to personal, religious, and even political peace. Whether or not these assumptions strike us as strange from our twenty-first-century perspective, Leibniz warmly embraced them.

2. First problems

Readers may reasonably balk at this point. For most, the claims just presented will not sound familiar. Since Leibniz is one of our philosophical heroes, it certainly seems odd that there remains so much to learn about his philosophy. I would like to address this difficulty briefly and to offer an explanation as to why so much of Leibniz's thought has escaped us for so long.

I take it to be obviously true that in order to understand the proposals of a major philosopher in the seventeenth century, one needs to read the main writings of the figure and to situate those texts within their proper intellectual context. To do this, however, is not as easy as it sounds. Not only is it sometimes difficult to identify what the main texts are, it is frequently impossible to know which of the abundant intellectual currents of the period will prove relevant to them. Let's consider briefly the related problems of textual and contextual identification.

For many seventeenth-century authors, in order to discern the details of their system, it is unwise to restrict one's attention only to published works. Given the importance of letters in the period as a means of promulgating philosophical views, a consideration of the relevant correspondence can be extremely illuminating. Moreover, in those cases where there are extant drafts of texts, a careful comparison between the draft and the published version of a text can reveal a great deal about underlying worries and assumptions. But a problem arises: once the consideration of drafts of texts and related letters has begun, it is unclear how to stop the textual survey. Every scrap of writing becomes relevant, and the main texts become lost in

a mass of unedited papers. Nor is that all. The relevance of some texts will not be evident until the context is set. But the difficulty of setting the right context makes the textual problems seem small by comparison. Because of the enormous complexity of the seventeenth-century intellectual debate, it is often extremely difficult to identify the intellectual currents relevant to a particular author. The writings of Descartes afford a good example of an early modern thinker whose letters are revealing and whose philosophical context is both relevant to the evaluation of his thought and difficult to reconstruct. For example, despite his energetic attacks on scholasticism, Descartes often relies on scholastic notions in his published works, and sometimes proclaims the virtues of the scholastics in his letters;²⁶ despite his proclamations of complete originality, many of his ideas have an ancient pedigree.²⁷ But the student of Descartes need not despair. Because historians of philosophy have begun to chart some of the previously unexplored regions of seventeenth-century thought, real progress has been made in recent years in more properly situating and therefore in better understanding the texts of philosophical giants like Descartes.

Unfortunately for the student of Leibniz's thought, both the textual and contextual problems are much more severe. As scholars have often noted, there is no single exposition of Leibniz's metaphysics replete with extended arguments and details. He published very little during his lifetime and none of the published texts (e.g., *A New System of Nature*, the *Theodicy*) is a thorough-going account of his philosophy. Although there are a number of identifiable *main* texts, it remains unclear how to treat their interrelations since they contain noticeable differences and were often written over many years. Except perhaps for the *Monadology*, one has to piece together Leibniz's system out of letters and a vast number of short essays and notes. This is a formidable chore since our energetic German wrote hundreds and hundreds of letters and thousands of pages of notes, of which only a relatively small proportion has yet been published. As courageously as the Academy editors in Germany confront the daunting task of preparing these vast materials for publication, it will be decades before all the philosophical papers and letters are in print. This enormous body of work and the problem of gaining access to it create a genuine obstacle to the would-be scholar. It is surely a difficult assignment to acquire a broad understanding of Leibniz's thought and to attend to all of its aspects when a major part of it remains unavailable for easy inspection.

26. For the best recent treatment of Descartes' complicated relation to scholastic physics and for citations to other literature, see Dennis Des Chene, *Physiologia: Natural Philosophy in Late Aristotelian and Cartesian Thought*. For Descartes' positive attitude to some scholastic philosophers, see Roger Ariew, "Descartes and Scholasticism: The Intellectual Background to Descartes' Thought."
27. It is striking that Descartes' contemporaries recognized the debt he owes to philosophers like Augustine. See, e.g., Johann Christoph Sturm, *Philosophia Eclectica*, 51–53, and Hermann Conring in correspondence with Leibniz, II i 84f. For a recent study of Descartes' Augustinianism, see Stephen Menn, *Descartes and Augustine*.

But there is another difficulty posed by Leibniz's works: many of them are hastily written personal notes that are sometimes incomplete and often undated. As Leibniz himself wrote about his papers: "instead of treasure . . . , you will only find ashes; instead of elaborate works, a few sheets of paper and some poorly expressed vestiges of hasty reflections, which were only saved for the sake of my memory."²⁸ These sheets – which contain deletions, additions, an enormous number of reformulations, and which are definitely *not* few in number – reveal an impatient intellect hurrying to express its ideas as quickly as possible. Because Leibniz wrote these for himself, it is often difficult to grasp his reasoning and decipher his underlying philosophical motivation: he typically neither states his most basic assumptions nor articulates how the piece he is presently writing fits into a general plan or project. Part of the problem here is that there is often not one single project but several overlapping ones.

One might expect more from both the publications and the letters that Leibniz sent to the great philosophers of Europe, often with the expressed goal of revealing his ideas. But there is a problem even here. He characteristically neither states his most fundamental assumptions nor explains how he arrived at his conclusions. As I argue in chapter 1, Leibniz had specific methodological reasons for not being forthright about his views: his goal was to avoid preaching in an attempt to engage his reader. By such means, Leibniz hoped to nudge the wayward soul toward the truth. In a uniquely frank moment, he writes in 1676:

A metaphysics should be written with accurate definitions and demonstrations, but nothing should be demonstrated in it apart from that which does not clash too much with received opinions. For in that way this metaphysics can be accepted; and once it has been approved then, if people examine it more deeply later, they themselves will draw the necessary consequences. Besides this, one can, as a separate undertaking, show these people later the way of reasoning about these things. In this metaphysics, it will be useful for there to be added here and there the authoritative utterances of great men, who have reasoned in a similar way; especially when these utterances contain something that seems to have some possible relevance to the illustration of a view.²⁹

But as important as it may be to recognize Leibniz's rhetorical goals, this recognition itself does not make it very much easier to discern the implicit assumptions and suppressed premises that constitute the core of his thought. It is left to the dutiful student to excavate these basic assumptions, scattered as they are among Leibniz's notes and letters.

To make matters worse, Leibniz often plays with formulations and tries out the terminology of other philosophers. Benson Mates describes one aspect of this problem well:

Contrary to what many commentators seem to have supposed, [Leibniz] does not treat his philosophical principles as a deductive system within which certain propo-

28. VI iii 533. 29. VI iii 573f: Pk 95.

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sitions are to be accepted without proof and the rest are to be deduced from these. . . . He deduces the various principles from one another in different orders and combinations. Often he gives alternative definitions of the same concept, sometimes even showing how to derive these from one another. It is obvious that he has no particular order of theorems and definitions in mind.³⁰

The terrifying thing about working on Leibniz is that no single work or small group of scattered comments can be trusted as hard evidence for an interpretive point. It is rarely the case that a few passages can be trusted *by themselves* to tell the whole story about a doctrine. In order to understand Leibniz's position on a topic, one needs to take the widest possible textual perspective. A striking example of the dangers that befall the student who focuses on one group of texts in a period and ignores the others is offered by the writings of 1671. In that year, Leibniz published a two-part work that has generally been considered his most important early publication and that has been analyzed by a number of qualified scholars. Notwithstanding several competent analyses of the *New Physical Hypothesis* and *Theory of Abstract Motion*, historians continue to disagree about the basic facts (e.g., about whether or not Leibniz was an atomist, about whether he was a dualist or a monist). But in 1671, Leibniz also sent some philosophical proposals to a German duke, and wrote a number of letters to important European intellectuals. As obscure as these writings at first appear, careful study of them yields considerable help in grasping the philosophy that underlies the published texts. Because Leibniz is so often reluctant to set the stage for a philosophical proposal or to acknowledge its various implications, one often has to go well beyond the text in order to understand how the proposal at hand relates to other parts of his thought. Moreover, Leibniz encourages confusion by using one terminology (say, scholastic) in one text and an entirely different one (say, mechanical) in another. For instance, in the *Theory of Abstract Motion*, he presents his basic ontology in terms of momentary minds and bodies; in some letters written in the same year, he talks about a World Soul, a core of substance, and the active and passive principles in nature. Although at first glance the difference between these formulations implies a radical difference in ontology, a more thorough analysis reveals that these are different formulations of the same underlying theory of substance. The moral to the story is clear: one cannot depend either on a single essay or on a small group of passages taken in isolation from others in the same period. When it comes to Leibniz's writings, it is necessary to take the widest possible textual perspective.

Nor is this all. There is another severe and unusual problem that faces the interpreter of Leibniz's thought. I suggested at the outset of this section that, because of the enormous intellectual complications of the seventeenth century, it is often difficult to situate the texts of our philosophical heroes in their proper intellectual context. Not only did Leibniz and his contemporaries inherit the whole history of philosophical discussions about all the

30. Benson Mates, *The Philosophy of Leibniz: Metaphysics and Language*, 4.

traditional philosophical topics, they interpreted these discussions through their own very definite prejudices, and also generated a number of their own grave philosophical difficulties. Since seventeenth-century authors rarely felt the need either to explain the subtleties of the problem at hand or articulate the precise proposals against which they were responding, the interpreter of their writings often has to go outside the text to discover both the exact nature of the problem and the details of the rejected solutions. Because of Leibniz's astonishing erudition and his conciliatory methodology, it is particularly difficult to construct the conceptual framework of his writings. With his texts, the first place to turn – both for a thorough understanding of the problem and for a proper evaluation of his solution – is to the entire history of philosophy. That Leibniz was thoroughly familiar with that history is clear; that he mined it constantly for inspiration and arguments is less clear, though no less true. An important case in point is Leibniz's use of the Platonist doctrines of emanation and sympathy. Although his mature writings contain accounts of the emanation of God and the sympathy among creatures, he nowhere informs the reader about the fundamental status of these ideas in his thought. Moreover, because the standard treatments of seventeenth-century German philosophy have not noticed the Platonism available to Leibniz as a student in Leipzig, his original conception of the relation between God and creatures has not been recognized; and because his early conception of God has not been discerned, the close relation between these Platonist doctrines and his doctrine of Preestablished Harmony has not been understood. Not only did Leibniz use major parts of the history of philosophy without citation or explanation, he thought that it was a *good thing* to combine ideas taken from the great philosophical systems. Because many of his contemporaries shared a similar conception of philosophical history, they could grasp what he meant when he used terms like 'World Soul' and 'seminal causes.' One of the main reasons that it is so difficult for the twentieth-century scholar to recognize the borrowed doctrines and transformed assumptions in Leibniz's writings is that he made such abundant use of the entire history of philosophy as it was understood in the seventeenth century.

The *First truths* serves as an excellent example of some of the problems that face the student of Leibniz's thought. In 1901, when Couturat made such a convincing case for his account of Leibniz's philosophy, his key witness was the *First truths*. As Couturat writes: "This fragment is unfortunately not dated. But by comparing it to short works and letters of known date, we can conjecture with high probability that it was written about 1686 when Leibniz completed the principles and the essential theses of his system."³¹ Most subsequent scholars have agreed with Couturat, although some have given the essay an even earlier date. For example, Loemker describes *First truths* as a "forestudy" of the *Discourse on metaphysics* and

31. For a summary of Couturat's interpretation, translated into English, see Couturat, "On Leibniz's Metaphysics." The quotation here is from that translation, 20.

places the essay within the years 1680–84. Rescher concurs: despite the fact that he finds elements of Leibniz’s mature thought scattered throughout the early texts, he insists that it was not until the 1680s “when [the] mature philosophy took form.”³² However, the Academy editors have shown that the fragment was written between May and December 1689. Although this information has been available to a small group of scholars for several years, the case for the later date has only just been published.³³

The *First truths* also offers a case study in the dangers of considering any of Leibniz’s essays in isolation. The text itself encourages at least two serious interpretative mistakes. First, the only account of substance contained among the first truths is the complete concept theory. Leibniz’s other characterizations of substance during the period are not present. In the *Discourse on metaphysics* and the related correspondence with Arnauld, for example, Leibniz emphasizes the fact that a substance is a unity per se, though he neither motivates this notion nor indicates exactly how it is related to the complete concept theory. Because the main texts of the period offer no clues about how to connect these accounts either with one another or with some of the other prominent claims about substance (e.g., that each substance mirrors all the others), many scholars have concluded that there is little or no relation among them and hence that there is no underlying theory of substance. According to Mates, for example, Leibniz’s “definitions of ‘substance’ seem to have little connection with one another.” Mates writes:

we are left to wonder what reason he could possible [sic] have had for holding that those and only those entities that ‘have with them active force’ also have ‘concepts that contain every quality of whatever falls under them’ At any rate, it clear [sic] enough that for Leibniz the only substances are the monads, even though it is unclear how he reached this conclusion.³⁴

The second interpretative mistake encouraged by the *First truths* is its bald assertion that the central doctrines of Leibniz’s metaphysics follow from the definition of truth. Couturat deemed the essay his most important piece of evidence, and Russell happily used it in the preface to the second edition of his book (in 1937) as proof of his original interpretation of 1900. But Couturat and Russell were wrong, and Leibniz was misleading: the theory of truth neither precedes the other first truths logically nor, as I show,

32. E.g., Ariew and Garber accept the Couturat date; see AG 30. For the views of Loemker and Rescher, see L 267 and Rescher, “The Contribution of the Paris Period (1672–76) to Leibniz’s Metaphysics,” 45, 51 n. 12.

33. In the spring of 1999, the Academy editors published the scholarly edition of *First truths*, along with 2943 pages of other philosophical papers, of which the vast majority were written in the period 1677–90 and were previously unpublished. According to the Academy editors, the essay was written in response to discussions that Leibniz had had with Italian philosophers during his travels. The date they give is based on the fact that the fragment was written on Italian paper that Leibniz used between May and December 1689. See VI iv [B]1643.

34. Mates, *The Philosophy of Leibniz*, 194–95.

does it precede them historically. But the fact that the theory of truth is neither logically nor developmentally prior did not prevent Leibniz from trying out this presentation of his tenets. Even a quick survey of some of his better-known texts of the 1680s and 1690s discloses other very different formulations. For example, in the *Discourse on metaphysics*, he suggests that the complete concept account of substance is the fundamental truth from which his other first principles follow. The point to emphasize is that Leibniz is not being disingenuous in either the *Discourse on metaphysics* or the *First truths*: an understanding of the *deep* motivation behind the theory of truth and the complete concept account of substance would in fact motivate the other doctrines. But the problem remains: how are we to glimpse the deep motivations, if Leibniz never tells us what they are?

3. A different approach to first truths

Given the scant help Leibniz gives his reader about the core elements and consequences of his thought and given his extraordinary erudition and the near impenetrability of his texts, it is no wonder that it has been so difficult to make out his most fundamental views. It is in an attempt to beat Leibniz at his own game that this book attempts to take the widest possible textual and contextual scope. My goal is two-fold: to offer a coherent account of Leibniz's basic metaphysics and to present the first systematic study of the development of his thought. As it turns out, the second goal is a means to the first. Because of the textual and contextual difficulties articulated above, Leibniz's first truths are most easily approached through a study of their development. In an attempt to excavate the assumptions beneath the first truths, I turn to Leibniz's early texts, where his most basic beliefs are closest to the surface and easiest to discern. But it is not sufficient just to make a thorough survey of the writings. In order to uncover Leibniz's philosophy, we must dig through several layers of historical material. As suggested earlier, this is particularly hard work since Leibniz's philosophy is built out of elements borrowed from nearly all the dominant philosophical schools. As I argue in chapter 1, Leibniz intended to bring about intellectual peace by means of a true philosophy forged out of the vast philosophical materials extant in the seventeenth century. Because many of the raw materials for his project were forgotten in the post-Newtonian age, a significant amount of historical work has to be done to unearth them. Many of the chapters of this book contain historical material. Because a presentation of all the historical material that is relevant to Leibniz could easily fill several volumes, I have restricted my presentation to the historical doctrines that directly influenced the development of his thought. In chapter 1, I discuss Renaissance syncretism and early modern conciliatory eclecticism; in chapter 2, I describe some of the theological problems that most concerned the young Leibniz; in chapter 3, I summarize the seventeenth-century tradition of reformed philosophy, and display the role of the new mechanical physics within it; and the whole of chapter 5 is given over to an account of the

Platonist doctrines that Leibniz absorbed at the university. Each one of these historical surveys allows us to discern a layer of Leibniz's thought. If the interpretation offered here is successful at unveiling some of the deep motivations behind his first truths, then that success is very much due to this historical material. As Leibniz wrote in 1714:

it is good to study the discoveries of others in such a way that allows us to detect the source of their inventions, and [thereby] to make them in some sense our own. I wish Authors would give us the History of their discoveries and the process by which they arrive at them. When they do not do this, it is necessary to try to guess in order to profit better from their work.³⁵

Although I have tried to keep the guesswork to a minimum, I have taken Leibniz's advice to heart. If I have made some headway in understanding the deep motivations and subtle interrelations among his first truths, it is because I have attempted "to detect the sources of [his] inventions."

Throughout his career, Leibniz was concerned to present careful definitions and thorough-going arguments for his first truths, but they were themselves the result of a complicated methodology. As a student in Leipzig in the early 1660s, Leibniz learned from his humanist professors that the true metaphysics was to be created from the materials of the prominent philosophical schools. He learned to turn primarily to the Aristotelian philosophy for inspiration about concrete individual substances and to the Platonist tradition for help on matters concerning God and the interrelations among creatures. In other words, during his student days in Leipzig (1661–63), Leibniz became thoroughly acquainted with three closely related intellectual traditions, each of which had an enormous influence on him: Renaissance humanism constituted the intellectual source for his conciliatory eclecticism and what I call his *Metaphysics of Method*, Aristotelianism formed the basis for his *Metaphysics of Substance*, and Platonism offered the materials for what I refer to as his *Metaphysics of Divinity*. These three philosophical legacies offered the raw materials from which he drew throughout his life and which he used to construct the foundations of his own philosophical edifice.

After leaving the university in 1663, and during the course of his early development, the young Leibniz confronted the startling array of intellectual problems of his day. It is well known that in the mid-1660s he became greatly impressed with the new mechanical physics promulgated by philosophers like Galileo, Descartes, and Gassendi. What is less well known is the fact that at the same time, Leibniz confronted three problems that profoundly influenced the development of his thought and that were all directly related to his goal of personal, religious, and political peace: he believed that the political climate in central Europe called for legal reform, that the philosophical sectarianism of his contemporaries demanded methodological reform, and that the continued religious strife among the Roman Catholics

35. G III 568.

and the various Protestant sects called for greater rhetorical, theological, and philosophical finesse. Armed with the humanism, Aristotelianism, and Platonism that he had acquired at the university, Leibniz attacked these (and other) problems with enormous energy and insight. The fundamental features of his metaphysics developed as a result of this intellectual confrontation.

This book has ten chapters and is divided into four parts. In Part I, I argue that Leibniz responded to the political, religious, and philosophical chaos that he perceived around him by developing a conciliatory methodology. According to his *Metaphysics of Method*, there is a truth that exists beneath the prominent philosophical schools, that can be reached through a careful examination of the fundamental ideas of those schools, and that will convert all careful thinkers when properly presented. As I argue in chapter 1, once we place Leibniz's early works in the context of his conciliatory goal, it is possible to discern for the first time a number of significant philosophical proposals. Whereas previously these early writings have smacked of juvenile indecision, once put in their rightful context they can be seen to contain the foundations of an elaborate philosophy. In Part II, which contains chapters 2, 3, and 4, I turn to Leibniz's *Metaphysics of Substance*. In chapter 2, through a detailed analysis of a series of theological essays composed in 1668–69, I expose a set of underlying assumptions, which, though not previously noticed, constitute some of Leibniz's most fundamental beliefs about substance, which he took to be thoroughly Aristotelian, and which he continued to believe for the rest of his career. With these Aristotelian assumptions as tools, in chapter 3, I excavate his original conception of substance. I show that this theory is a brilliant melding of an Aristotelian approach to substance and a mechanical physics. The moral to this interpretative story is important: by taking Leibniz's conciliatory method seriously, his original conception of substance and related elements of his thought become evident for the first time. In chapter 4, I uncover a problem that Leibniz found in late 1669 with this original account of substance and explicate the means by which he solved it. The result of these revisions, which he articulated in 1671, is a conception of substance and a set of metaphysical commitments that bear a striking similarity to many of the underlying doctrines of the *First truths*.

Having traced the evolution of Leibniz's *Metaphysics of Substance*, I turn in Part III to his *Metaphysics of Divinity*. Where the *Metaphysics of Substance* treats substance as an active, self-sufficient thing, the *Metaphysics of Divinity* sees it as a created thing into which God constantly emanates the divine essence. Where the former has its roots in the Aristotelian philosophy, the latter reaches back to the Platonist tradition.³⁶ In recent dis-

36. In his book, *Descartes and Augustine*, Stephen Menn distinguishes between a *Platonic* doctrine, which is one that is found in Plato's dialogues, and a *Platonist* doctrine, which is one extracted from the texts of the Platonists (xii–xiii). Menn's distinction seems exactly right and I follow it in the present study.

cussions of Leibniz, there has been a good deal of speculation about the Platonism in Leibniz's philosophy, and especially about its source. In chapter 5, I show that Leibniz became thoroughly acquainted with ancient and modern Platonism as a student in Leipzig, many years earlier than has generally been thought. Throughout his career he felt it necessary to explain his "rehabilitation" of Aristotelian elements because so many other contemporaries had rejected that tradition. He was not similarly motivated to justify his use of the Platonist tradition because it had not fallen into such disrepute: both the professors at Leipzig and many of Leibniz's German contemporaries turned to the Platonist tradition for inspiration concerning their own metaphysics. In chapter 5, I survey those Platonist doctrines that Leibniz's teachers bequeathed to him and that he used to construct his own Metaphysics of Divinity. With these Platonist tools in hand, I dig through the texts of 1668–71 and excavate the origins of Leibniz's conception of harmony, the general features of his epistemology, and the core of his mature metaphysics. The results of this process of recovery are dramatic. In chapter 6, I show that once we place Leibniz's original comments about harmony in the context of the Platonist assumptions of emanation and reflection, it becomes clear that God is both the unity and the diversity in the created world. Moreover, once we see some of these early essays in this light, it is obvious that Leibniz's epistemology is Platonic and that by 1669 he had developed the complete concept account of substance.

In Part IV, which includes chapters 7, 8, 9, and 10, I describe the laying of the foundations of Leibniz's mature metaphysics. In chapter 7, I turn to his notions of matter and passivity. I argue that although prior to 1670 Leibniz accepted the existence of passive extended (primary) matter, he became increasingly troubled by the idea of material passivity, and finally rejected it in the winter of 1670–71. From that point forward, Leibniz accepted an ontology of mind-like substances and a version of what is sometimes called *panorganism*. In chapters 8 and 9, I present an elaborate argument based on a number of unnoticed texts to the conclusion that prior to his departure for Paris in March 1672, Leibniz proposed the doctrine of Preestablished Harmony. If I am correct in my analysis of the writings of this period, then Leibniz developed the core features of his metaphysics a full fourteen years earlier than generally thought, independently of his conception of truth, and for reasons that have not been previously understood. In chapter 10, I show how the other tenets of Leibniz's mature thought, including the theory of truth, grew naturally out of Leibniz's early metaphysics. Despite the evolution of important details between 1672 and 1679, he does not waver from his basic metaphysical commitments of late 1671. This analysis disproves the Russell–Couturat interpretation once and for all: the account of truth, which is nowhere to be found among the papers of 1668–76 and which developed *after* the metaphysics was firmly in place, is not the key to Leibniz's thought but itself the *result* of his metaphysics. The analysis also shows that Leibniz was never a whole-hearted mechanist or atomist or occasion-

alist, and moreover that the metaphysics of Spinoza could not have had a major influence on the development of his thought.

Finally, in the conclusion, I consider the truth behind the first truths. The developmental story of chapters 1–10 is more than just an account of Leibniz's philosophical evolution: it is also an excavation of the motivations behind these truths. Once we recognize that many of Leibniz's most characteristic doctrines (e.g., the principle of the Identity of Indiscernibles, the complete concept theory of substance) follow from some of the core assumptions of his *Metaphysics of Method, Substance, and Divinity*, we will have reached the real foundations of the philosophy of the *First truths*. Once we see these truths as the concluding chapter of this developmental narrative, some of the problems that have persistently plagued the interpreter of Leibniz's mature thought are easily solved. While a good deal more work needs to be done before the various implications of my interpretation are fully unraveled, I offer a preface to that project in the conclusion. No doubt many questions will remain about Leibniz's mature philosophy, but I hope both to have diminished some of the mystery that surrounds his first truths and to have made some headway in grasping their interrelations.

Before I begin the developmental story of chapters 1–10, I would like to call attention to the Appendix. Because many of the chapters in the book contain summaries of assumptions uncovered in the textual analysis of the chapter and because, throughout the book, frequent reference is made to these assumptions, it will be convenient to list them in Part II of the Appendix and to summarize some of the mature doctrines to which I refer in Part I. That is, for the sake of easy reference, I have summarized both the assumptions presented in the book, chapter by chapter, and the relevant tenets of the later philosophy in the Appendix. It will be especially important to keep Leibniz's assumptions close at hand. When Russell had his revelatory experience about "the inmost recesses of Leibniz's edifice" in the Lent term of 1899, he saw "how its foundations were laid, and how its superstructure rose out of them."³⁷ The developmental story of this book implies a radically different interpretation of both the foundations and its superstructure. According to my account, the assumptions summarized in Appendix II constitute the materials with which Leibniz laid his metaphysical foundations and out of which he built his elaborate and brilliant philosophical edifice. Let's now turn to the story behind this construction.

37. Russell, *A Critical Exposition*, v.

Part one
Metaphysics of Method

Eclecticism and conciliation, 1661–68

In the spring of 1661, at the age of fourteen, Leibniz began his university studies in Leipzig, where he came under the influence of the well-known German humanist, Jakob Thomasius. At the end of the decade, in the spring of 1669, he composed a long letter to Thomasius in which he presented for the first time in detail his most basic methodological and metaphysical assumptions. Between the years 1661 and 1669, Thomasius acted as the single greatest influence on Leibniz's philosophical development. It was from Thomasius that the brilliant young student acquired a commitment to a historically based conciliatory eclecticism, a belief in the soundness of the Aristotelian philosophy, and a familiarity with Platonism. Leibniz differed from his mentor on many points and went well beyond him on others, but throughout his life he remained convinced of the main philosophical lessons learned in Leipzig.

One of the central theses of this book is that the methodological and metaphysical commitments that Leibniz developed during his youth form the bedrock of his philosophy. There are two distinct parts to his method. The key to understanding Leibniz's thought in the 1660s (and much of what he did later) is to recognize that he practised a form of conciliatory eclecticism that fostered the accumulation and consideration of a wide variety of diverse ideas, that assumed an underlying truth beneath the various conflicting schools, and whose only stipulation was that the resulting collection be made consistent with Christian doctrine.¹ However, once his eclecticism had delivered the truth (or a significant part of it), Leibniz intended to make that truth available to others. Although he was naive enough to believe that the true philosophy could effect individual, religious, and political peace, he was sufficiently realistic to know that its dissemination should be approached with extreme care. Recent events had provided Leibniz and his contemporaries with ample evidence of intellectual sectarianism, religious hatred, and political instability. For the sake of humanity, the young Leib-

1. In his recent groundbreaking study of Leibniz's ethical and political thought, Patrick Riley approaches these areas of Leibniz's philosophy from a perspective very similar to my own. Riley recognizes that Leibniz was concerned "to reconcile apparently conflicting ideas, to take from each kind of thought that which was soundest and to synthesize it with the seemingly incommensurable truths of other systems" (14). See his *Leibniz' Universal Jurisprudence: Justice as the Charity of the Wise*. It is a relief that scholars are finally recognizing both the inadequacy of the Russell-Couturat approach to Leibniz's thought and the inaccuracy of Russell's sketch of Leibniz's personality.

niz strove to develop a means to present his discoveries with the right degree of rhetorical subtlety. In this chapter, I excavate and articulate Leibniz's early methodological assumptions, both the conciliatory method that he used to reach the truth and the rhetorical means that he developed to present it. In the remainder of the book, we will have the opportunity to see Leibniz's two-part method in action.

1. A walk in the woods

There is a well-known passage in which Leibniz describes a critical point in his early philosophical development. He writes to Nicolas Remond in 1714:

After finishing the *Ecoles Triviales* I fell upon the moderns, and I recall walking in a grove on the outskirts of Leipzig called the Rosental, at the age of fifteen, and deliberating whether I should keep the substantial forms [si je garderois les Formes Substantielles]. Mechanism finally prevailed and led me to apply myself to mathematics.²

Leibniz scholars have made much of this passage. They use it as evidence of his youthful conversion from scholasticism to mechanism. They also sometimes attribute a memory lapse to him, and insist that the walk must have occurred at least two or three years later than Leibniz says (that is, in 1663–65 and not in 1661–62).

The two claims are related in an interesting way. According to Willy Kabitz in his influential book, *Die Philosophie des jungen Leibniz*, Leibniz's decision could not have taken place before 1664. Kabitz's argument for the later date is based on the assumption that when Leibniz completed his walk, he had converted from the scholasticism of his youth to mechanism. Kabitz maintains that Leibniz's university thesis, the *Metaphysical Disputation on the Principle of Individuation*, which is an exemplary piece of scholastic philosophy written in 1663, could not have been composed after Leibniz's transforming stroll, and therefore that the walk must have occurred after its composition. Moreover, because Leibniz's next work, the *Specimen of Collected Philosophical Questions Concerning Law* of 1664, includes Aristotelian elements and hence is not a complete break with Aristotelian principles, and because his letter to Thomasius of February 1666 has no Aristotelian

2. G III 606: L 655. Leibniz was born on July 1, 1646. When he strolled through the Rosental woods in the early 1660s, many of his contemporaries were still very much in competition with one another to create a "new philosophy" – that is, a replacement for Aristotelianism. Although by the end of the century the new mechanical philosophy had won the competition, it was not at all clear in the 1660s how the contest would turn out. In brief, there was a dramatic shift in perspective between the time of Leibniz's youthful stroll and his description of it in 1714. In the 1660s, there were many different ways of being both new and modern. For a recent discussion of some of the complications concerning 'the new philosophy,' see Stephen Menn, "The Intellectual Setting," esp. 46–48, 53–54; also see Daniel Garber and Michael Ayers, *The Cambridge History of Seventeenth-Century Philosophy*, passim.

elements and so is such a break, we should postpone the walk and "his decision for the mechanical hypotheses until sometime in 1665." Therefore, Kabitz concludes, Leibniz was mistaken in saying his decision occurred when he was 15; he was in fact at least three years older.³ Since its publication in 1909, Kabitz's book has remained the most complete account of the 1660s and subsequent commentators have on the whole accepted Kabitz's conclusions.⁴ While the exact date of Leibniz's decision is not so important, the assumptions made by Kabitz and his followers are: that one cannot be an Aristotelian and a mechanist at the same time and that, in the words of one commentator, these philosophies "confronted him as stark alternatives."⁵

Nor is this assumption unreasonable. Aristotle's philosophy is fundamentally opposed to that of standard mechanists like Gassendi and Descartes. As Descartes himself well understood, the core of his metaphysics is incompatible with that of the ancient; he writes to Mersenne: "for I see that it [the Aristotelian philosophy] is so absolutely and so clearly destroyed by means of the establishment of my philosophy alone, that no other refutation is needed."⁶ It is therefore perfectly sensible to interpret Leibniz's Rosental decision as a rejection of the Aristotelian philosophy. In another much quoted passage, Leibniz writes: "I had penetrated far into the territory of the scholastics, when Mathematics and the modern authors [les Auteurs modernes] made me withdraw from it, while I was still young. I was charmed by their beautiful ways of explaining nature mechanically, and I rightly depised the method of those who use only forms or faculties, from which one can learn nothing."⁷ Such passages, and the fact that Leibniz remains committed to mechanical physics throughout the period, have been taken to provide ample evidence of his youthful rejection of the Aristotelian philosophy. For most interpreters of the 1660s, the only remaining question is one of influence: Leibniz presents the views of several modern authors as though they were his own, so that it has been very difficult to discern whether it was Bacon, Gassendi, Hobbes, or Weigel who was the major source of his philosophy. Some commentators have presented plausible

3. Willy Kabitz, *Die Philosophie des jungen Leibniz*, 50-51. For the *Specimen of Collected Philosophical Questions Concerning Law*, see VI i 68-95; for the letter to Thomasius, see II i 4-5.
4. In the fifty years before the publication of Kabitz's book, several works were written on Leibniz in Germany, some of which consider the influence of Aristotle. For the two most interesting of these, see J. Jasper, "Leibniz und die Scholastik" and Fritz Rintelen, "Leibnizens Beziehungen zur Scholastik," 157-188; for the entire list, see Kurt Müller and Albert Heinekamp, *Leibniz-Bibliographie*. During the same period, G.E. Guhrauer wrote his two volume biography of Leibniz which remains helpful: *Gottfried Wilhelm Freiherr von Leibniz: Eine Biographie*. Since the publication of Kabitz's book in 1909, there have only been three relatively systematic studies of the period, and none of these takes into account the range of Leibniz's early interest. They are Konrad Moll, *Der junge Leibniz*, (2 vols.); Arthur Hannequin, "La première philosophie de Leibniz"; and Philip Beeley, *Kontinuität und Mechanismus*. There has been no work in English, although E.J. Aiton's biography of Leibniz contains a good summary of the period; see *Leibniz: A Biography*, chs. 1 & 2.
5. Stuart Brown, *Leibniz*, 30. 6. AT III 470. 7. G IV 478; AG 139 L 454.

stories for the primary influence of one of these authors,⁸ while others have taken the sheer number of views expounded and the long list of references as proof that Leibniz is merely an enthusiastic convert to the new philosophy without any clear ideas of his own. In one commentator's words, Leibniz's early philosophy is "characterized by uncertainties and reversals."⁹ Scholars have often noted that Leibniz's early texts are strewn with references to Aristotle, but because of Leibniz's obvious abuse of key features of the ancient philosophy, these references have been considered mostly rhetorical and his rejection of that philosophy sincere.¹⁰

From a survey of the youthful writings, then, it would appear that around 1664 Leibniz rejected the Aristotelianism of his youth and accepted the mechanical philosophy; that he was undecided about the details of that philosophy and hence had no coherent philosophical offering of his own until he produced the two-part *New Physical Hypothesis and Theory of Abstract Motion* of 1671, his first significant publication on topics concerning metaphysics and physics. This is the story that Kabitz first proposes and that most subsequent commentators accept.¹¹ It is a plausible story, based on reasonable assumptions and careful scholarship.

But it is false. Once we put aside our own prejudices about the incompatibility of the Aristotelian and the mechanical philosophies and begin to take seriously Leibniz's methodological prescriptions during the period, the philosophical richness of his early texts becomes apparent. When Leibniz

8. Concerning Hobbes' influence on the young Leibniz, see Howard Bernstein, "Conatus, Hobbes, and the Young Leibniz," Daniel Garber, "Motion and Metaphysics in the Young Leibniz"; Beeley, *Kontinuität*, passim; Richard Arthur, *The Labyrinth of the Continuum*, Introduction; and François Duchesneau, *La Dynamique de Leibniz*. Concerning Bacon, see especially Belaval, *Leibniz: Initiation à sa philosophie*, ch. 2. For the influence of Gassendi and Weigel, see Kabitz, *Die Philosophie des jungen Leibniz*, 51–53; Peter Petersen, *Geschichte der aristotelischen Philosophie im protestantischen Deutschland*, 347f; and especially Moll, *Der junge Leibniz*, passim. Brown credits Leibniz with Gassendian atomism between 1666–68 in his *Leibniz*, 31f, as does Milic Capek in "Leibniz on Matter and Memory," (80–81), and Hannequin, "La première philosophie," ch. 1.
9. Wilson, *Leibniz's Metaphysics*, 45.
10. See e.g. Capek, "Leibniz on Matter and Memory," 85f; Hannequin, "La première philosophie," 49.
11. The vast majority of commentators who discuss the 1660s and who mention the decision in the Rosental woods after the publication of Kabitz's book agree with him both on the date of the walk and the nature of Leibniz's decision. See Robinet, *Architectonique disjonctive, automates systémiques et idéalité transcendantale dans l'oeuvre de G.W. Leibniz*, 8f; Brown, *Leibniz*, ch. 3; L 4, 660, n. 2; Kurt Müller and Gisela Krönert, *Leben und Werk von Gottfried Wilhelm Leibniz: Eine Chronik*, 6; G. Stieler, *Gottfried Wilhelm Leibniz: ein Leben*, 13f; Dietrich Mahnke, *Leibnizens Synthese von Universalmathematik und Individualmetaphysik*, 371f; Kuno Fischer, *Gottfried Wilhelm Leibniz: Leben, Werke, und Lehre*, 38ff, and Beck, *Early German Philosophy*, 212. There are some exceptions: e.g., Petersen accepts Kabitz's dating of the walk in his *Geschichte der aristotelischen Philosophie im protestantischen Deutschland*, 349ff, but takes the conversion to be less dramatic; while Wilson, *Leibniz's Metaphysics*, 46, AG (vii), and H.W.B. Joseph, *Lectures on the Philosophy of Leibniz*, 9f, see Leibniz's decision as a rejection of Aristotelianism, but nonetheless accept that the decision occurs when he was fifteen. The most important exception is Belaval, who accepts neither the date nor the conversion: *Initiation*, ch. 2.

emerged from the Rosental grove, he was following in the footsteps of Thomasius. He was not a mechanist but a conciliatory eclectic, and he was engaged in a very definite enterprise: to construct a coherent philosophy out of ancient and new materials, something he managed to do in a brilliant way by the end of the decade.¹² In this chapter, I will argue that Leibniz did not turn from the Aristotelian philosophy to mechanism in the early 1660s, but rather from scholastic to mechanical physics, and that his intense (and apparently haphazard) study of the mechanical options during the mid-1660s was motivated by a desire to discover the common denominator of the new mechanical program so that he could intelligently combine it with the philosophy of Aristotle. In chapter 2, we will see that it was not until 1668–69 that Leibniz finally achieved the conciliatory goal to which he committed himself during his walk in 1661.¹³ In chapter 3, I will show that Leibniz's first published presentation of his original metaphysics and physics is not the two-part work of 1671, but rather his letter to Thomasius of 1669, which he published in 1670 and which contains a presentation of his original theory of substance, one whose details have previously gone unnoticed and one that Leibniz considered to be thoroughly Aristotelian.¹⁴

In order to grasp the real significance of Leibniz's peripatetic decision, we must see it and his subsequent writings against the background set by his contemporaries. In the next section, I present that background. In section 3, I reevaluate Leibniz's decision and his early writings and show that the vast number of references, the wide range of proffered ideas, and the apparent shift in views in the texts of the 1660s have acted as a camouflage of his real intentions. In section 4, I describe his two-part method.

2. Method and metaphysics in the seventeenth century

However foreign the landscape may appear to us, when Leibniz emerged from the Rosental grove he was on ground well trodden by his contempo-

12. Other scholars have noted Leibniz's comments about reconciling the Aristotelian and modern philosophies and have credited him with a youthful eclecticism according to which he is collecting ideas. However, none of these studies has attempted an analysis of the 1660s in this light nor has any articulated in any detail the result of Leibniz's eclecticism. See Moll, *Der junge Leibniz*, passim; Loemker, "Leibniz's Conception of Philosophical Method;" Erich Hochstetter, "Leibniz-Interpretation"; Belaval, *Initiation*, ch. 2; Alexandre Foucher de Careil, *Mémoire sur la philosophie de Leibniz*, ch. 1; Ulrich G. Leinsle, *Reformversuche protestantischer Metaphysik im Zeitalter des Rationalismus*, 230f.
13. Other scholars have recognized that when Leibniz rejects the substantial forms, he has not thereby cast aside the Aristotelian philosophy, but none has articulated in any detail how he goes on to use the ancient thought. See, e.g., Belaval, *Leibniz: Initiation, Philosophie*, Hochstetter, "Leibniz-Interpretation," and Leinsle, *Reformversuche*.
14. Garber, Moll, and Beeley have presented the outlines of a system in the period of 1668–71, but their interpretations differ significantly from the one I argue for here. Garber, "Motion and Metaphysics," 162–67, takes Leibniz to be a Cartesian; Moll, *Der junge Leibniz*, vol. 2, passim, sees him as a Gassendian atomist; while Beeley, *Kontinuität*, chs. 4–14, sees him roughly as a materialist. I will argue in chapters 2 and 3 that the original theory of substance is an Aristotelian one; it is this theory that has gone unnoticed.

aries. In order to follow the path that he took through the 1660s, we need a map of the philosophical terrain. I offer a sketch of one here.

The nature and scope of Renaissance humanism has been much discussed.¹⁵ We will bypass these complications and move directly to the humanist assumptions particularly relevant to our discussion of Leibniz. First and foremost, many humanists believed that the ancient texts were a treasure trove of truths that could be combined into a single unified philosophy.¹⁶ Because the philosophies of even the mightiest of ancients (e.g., Plato and Aristotle) did not obviously cohere, many humanists engaged in elaborate interpretative schemes. Most practised and preached conciliatory eclecticism among the ancient schools, and some extended their eclectic net to include more recent authors.¹⁷ For such philosophers, the assumption was that the diverse philosophical traditions were not as incompatible as they at first appeared; the goal was to forge a reconciliation among the worthy schools; the result was a mixture of ancient and modern ideas; and the hope was that the proper synthesis would effect peace among contemporary philosophers.

The early Renaissance philosopher, Giovanni Pico della Mirandola (1463–94), formulates one of the defining statements of Renaissance eclecticism in his *On the Dignity of Man* of 1486. Pico demands that we not devote ourselves “to any one of the schools of philosophy,” and notes that “it was a practice of the ancients to study every school of writers, and if possible, not to pass over any treatise.” He declares: “I have resolved not to accept anyone’s words, but to roam through all the masters of philosophy, to

15. Humanism has traditionally been taken to be the movement to recover and assimilate the wisdom of ancient Greece and Rome. But there is more to early modern humanism than this. For example, as Anthony Grafton has recently noted in *Defenders of the Text*, “a central feature of the humanists’ new sensibility” was “the ability to distinguish between the spurious and the genuine, the modern and the antique” (162). As we will see, for Leibniz and his predecessors, it was important to distinguish properly between the counterfeit and the real. For an account of some of the confusion about the term ‘humanism,’ see Paul O. Kristeller, *Renaissance Thought: The Classic, Scholastic, and Humanist Strains*, ch. 1. Among the standard accounts of Renaissance humanism are Paul O. Kristeller’s *The Classics and Renaissance Thought* and *Studies in Renaissance Thought and Letters*; Étienne Gilson, “Humanisme médiéval et renaissance”; and Eugenio Garin’s *Ritratti di umanisti*. For the most important recent discussions and for references to the vast intervening literature on the topic, see the articles in the *Cambridge Companion to Humanism*, ed. Jill Kraye. For a lengthy discussion of the humanist background to Leibniz, see Loemker, *Struggle for Synthesis*, Part II.
16. It is important to remember that direct knowledge of Plato during the medieval period was extremely limited. Only the *Meno*, the *Phaedo*, some of the *Timaeus*, and a piece of the *Parmenides* were available in Latin translation and, of these, only the *Timaeus* was widely available. Dialogues as important as the *Republic*, *Symposium*, and *Theaetetus* were not available until the fifteenth century. For a brief summary of these and related matters, see Brian P. Copenhaver and Charles B. Schmitt, *Renaissance Philosophy*, 14–16.
17. I use the somewhat vague designation ‘conciliatory eclecticism’ to refer to any eclecticism that attempts to combine the views of some group of apparently incompatible philosophies into a coherent system. It is not terminology used by Renaissance and early modern thinkers and so it is free of complicating connotations.

investigate every opinion and to know all the schools.”¹⁸ According to Pico, each philosophical tradition had a share of the truth, so that once the truths in each were discovered, they could be combined into one comprehensive and true philosophy. One of the main points of his project was to show that “the philosophies of Plato and Aristotle should be reconciled” and “a concord” between the two systems effected.¹⁹ In fact, Pico’s texts are more steeped in Platonism than in Aristotelianism, but it is important that unlike many of his contemporary humanists, he speaks favorably of Aristotle and the scholastics. He was prepared to add Aquinas, Scotus, Avicenna, and Averroës to his eclectic mixture. Pico was also the most prominent humanist to include Jewish and kabbalistic teachings in his syncretist vision.²⁰

For most Renaissance conciliatory eclectics, the philosophy that they proclaimed had a religious goal: because they assumed that one truth “flowed through” all philosophical schools and that this truth was Christian, they firmly believed that the ancient pagan texts contained Christian truths. Two obvious questions faced the conciliatory humanist: first, if there is a single truth to be discovered within the ancient philosophical schools, then why had it not been previously discovered?; second, if the truth is fundamentally Christian, then how did the philosophies of pagans like Plato and Aristotle come to contain so many truths? Although the details of their explanations differ, most Renaissance and seventeenth-century humanists agreed that it was the development of new philosophical, theological, and/or intellectual tools that made it possible for them, in a way that it had never been before, to excavate the buried truth. In this chapter and in chapter 3, we will see some of the details of these explanations. As for the second question, humanists offered two distinct answers. Many accepted an account of history that allowed them to sanctify pagan learning. This historiography, usually called the *prisca theologia* or ancient theology, was a brilliant melding of religion and philosophy. The story runs roughly as follows: Moses did not write down all the wisdom bestowed on him by God, but transmitted it in an oral tradition that continued until it found its way into the writings of Plato, Pythagoras, and others; moreover, Plato and other ancient authors intentionally obscured these divine truths because they were not appropriate

18. For the Latin text, see Pico, *De Hominis Dignitate*, ed. Eugenio Garin, 138–40; for an English translation, see Pico, *On the Dignity of Man*, trs. Charles G. Wallis, Paul Miller, and Douglas Carmichael, 21ff. For a brief account of the history of the text, see Copenhaver and Schmitt, *Renaissance Philosophy*, 165–66.

19. Pico, *De Hominis Dignitate*, 144, 162; *On the Dignity of Man*, 24, 33.

20. For a summary of Pico’s interest in the kabbalah and citations to the vast literature on the topic, see Copenhaver and Schmitt, *Renaissance Philosophy*, 171–73. The young Leibniz was familiar with Giovanni Pico (see, e.g., II i 176) and with another widely known Renaissance syncretist, Agostino Steuco (1497/98–1548), whose most important syncretic work, *Perennis Philosophia*, Leibniz cites (see VI ii 137 and also II.i.176). The mature Leibniz had books by each in his private library; see Gerda Utermöhlen, “Die Literatur der Renaissance und das Humanismus in Leibniz’ Privater Büchesammlung.” For an interesting discussion of the similarities between the methodological assumptions of Leibniz and Steuco, see Schmitt, “Perennial Philosophy: From Agostino Steuco to Leibniz.”

for the uninitiated.²¹ In the Renaissance, with the help of the newly discovered texts and the proper scholarly and philological tools, humanists like Pico believed that the wisdom in the ancient theology could be recovered and the single, unifying philosophy forged. This philosophy would of course be firmly rooted in Christianity, so that the unique truth of the Judeo-Christian tradition would coincide with philosophical truth. According to Pico, for example, the Jewish kabbalah was an important source of knowledge that was ultimately about Christian truths. On this reading of history, a Christian thinker could see pagan and Jewish philosophers as a source of divine wisdom. Pico and many other humanists insisted that with “the divine light” of Christian revelation, the wisdom of the ancients could be fully discerned.²²

The ancient theology was wildly popular. But it would not do for all. Jakob Thomasius was a conciliatory eclectic who was wedded to the ancient texts but who rejected this philosophical genealogy. Humanists like Thomasius offered another explanation for how the one truth could “flow through” all philosophical schools so that even pagan philosophers like Aristotle and Plato could contain Christian truths. For these philosophers, the divine truths could be read in the “Book of Nature.” That the ancient, pagan texts were a proper source of some divine truths was a tradition with a long, respectable history. For example, in *Romans*, Paul writes about the Greek philosophers in a much quoted passage: “For what can be known about God is plain to them, because God has shown it to them. Ever since the creation of the world his invisible nature . . . has been clearly perceived in the things that have been made.”²³ The philosophical profundity of the texts of Plato and Aristotle gave dramatic support to this thesis.

21. The standard text on the ancient theology remains D.P. Walker’s *The Ancient Theology: Studies in Christian Platonism from the Fifteenth to the Eighteenth Century*. Copenhagen and Schmitt, *Renaissance Philosophy*, also neatly summarize the tradition and cite more recent studies; see esp. 146–48. As they note, the theory that Plato was heir to an esoteric theology existed before the Renaissance, but it became “a major element in Western historiography only in the later fifteenth century,” when Marsilio Ficino and Pico made it famous (136). There were various elaborations on the story just given. For example, some humanists maintained that Plato had acquired his wisdom during travels to Egypt, where he met and conversed with Jewish wise men. One of the more amusing variations on the theme developed in France, where some French humanists argued that the ancient (French) Druids were the original source of this wisdom and where most of the major players in the genealogy were French. See Walker, *The Ancient Theology*, 74–79.
22. I have left out many important details in this brief account of the ancient theology, but one of these is worth noting because it bears on our topic. An important part of the apologetics of the proponents of the ancient theology was the texts entitled the *Hermetica* or *Corpus Hermeticum*, which were supposed to be extremely ancient and yet to contain many Christian truths. When Isaac Casaubon argued persuasively in the early years of the seventeenth century that these texts were post-Christian forgeries, the defenders of the ancient theology lost ground that was never regained. See Walker, *The Ancient Theology*, 17ff. and Grafton, *Defenders of the Text*, ch. 5. It is significant that Leibniz’s mentor, Jakob Thomasius, took Casaubon’s argument to undermine the theory. See his *Schediasma Historicum*, 34–38.
23. *Romans* 1: 19–20. Although medieval, Renaissance, and early modern thinkers tended to

That the ancient pagan philosophers were capable of profound knowledge was a pre-Renaissance idea. Dante Alighieri (1265-1321) offers a striking example. In his *Divine Comedy*, Dante traverses hell with his guide, Virgil, before finding his way to paradise and God. In limbo he meets the great pagan thinkers: first the poets and then the philosophers. He writes about the latter:

When I had raised my eyes a little higher,
 I saw the master of the men who know,
 seated in philosophic family.
 There all look up to him, all do him honor:
 there I beheld both Socrates and Plato,
 closest to him, in front of all the rest;
 Democritus, who ascribes the world to chance,
 Diogenes, Empedocles, and Zeno,
 and Thales, Anaxagoras, Heraclitus;
 I saw the good collector of medicinals,
 I mean Dioscorides; and I saw Orpheus,
 and Tully, Linus, moral Seneca;
 and Euclid the geometer, and Ptolemy,
 Hippocrates and Galen, Avicenna,
 Averroës, of the great Commentary.²⁴

Renaissance and early modern humanists happily embraced the idea of a “philosophic family”, though many disagreed with Dante’s placement of Aristotle at its head.²⁵ It was therefore common for thinkers, whether they accepted the genealogy of ancient wisdom or not, to endorse ancient pagan texts.²⁶ The assumption on the part of many humanists was that superior intellects, whether pagan or not, were able to glimpse God. Pico nicely expresses this point when he writes: “In every age there have been a few predominant thinkers, supreme both in judgment and knowledge . . . who all agreeing together, not only believed these things, but also powerfully proclaimed them . . . undoubtedly the whole of ancient theology, being like-minded, asserts one and the same thing.”²⁷ For Pico and subsequent conciliatory eclectics, two doctrines that at first seem incompatible may of-

interpret this biblical passage in the way suggested here, it is probable that it has no such meaning.

24. Canto IV, lines 130-144: *The Divine Comedy by Dante Alighieri: Inferno, a Verse Translation*, tr. Allen Mandelbaum, 37.
25. In Raphael’s grand painting, “The School of Athens,” of 1510-11, Plato and Aristotle share center stage.
26. Renaissance and early modern skeptics constitute an important exception to this. One of the most articulate and energetic proponents of early skepticism was Gianfrancesco Pico, the nephew and biographer of Giovanni Pico. For a summary of Renaissance skepticism and references, see Copenhaver and Schmitt, *Renaissance Philosophy*, 239-260.
27. Quoted in Walker, *The Ancient Theology*, 49.

ten, after careful study and full analysis, be made to cohere.²⁸ To twenty-first-century sensibilities, the resulting coherence may seem a perversion of the original tenets; to the sincere Renaissance conciliator, the coherence was a step toward philosophical truth and intellectual peace. There were conciliators who proclaimed coherence where none is now recognizable. For thoughtful eclectics like Pico, however, the proper analysis would involve a comparison of the tenet of one philosopher, its assumptions and implications, with the views of other great philosophers. If one doctrine seemed to conflict with another, then it was appropriate to reexamine the interpretation given to each. After thorough reexamination, the ingenious eclectic could often forge an agreement.

The conciliatory eclecticism of Renaissance humanism evolved in complicated ways that cannot be fully discussed here. What is important for our purposes is that Renaissance syncretism and various forms of conciliatory eclecticism persisted into the seventeenth century, and that in the post-Reformation period it became common for philosophers to distinguish between heretical and non-heretical ancient authors. Many Protestant thinkers rejected the genealogy of the ancient theology and believed that the new theology offered a key with which they could open the ancient texts.

Jakob Thomasius was such a thinker. I claimed earlier that Thomasius played a major role in the development of Leibniz's philosophical ideas throughout the 1660s. Now that the Renaissance background has been set, we can turn to one aspect of the complicated character of Thomasius' thought. That Leibniz's acclaimed teacher was a serious student of Aristotle has been noted by other scholars. What has not been properly understood, however, is that Thomasius' philosophical project was not merely Aristotelian; it was motivated by a commitment to a conciliatory eclecticism, and borrowed heavily from Platonism and other ancient sources. We will have the opportunity to discuss Thomasius' Platonism in chapter 5. Our concern here is with his intention to construct a philosophy out of apparently diverse philosophical sources. As we will see, Thomasius bestowed both his methodology and the role assigned to the Aristotelian philosophy on the young Leibniz.

Jakob Thomasius (1622–84) was Professor of Rhetoric, Dialectic, and Moral Philosophy in Leipzig.²⁹ His contemporaries considered him an “erudite” historian of philosophy, an important conciliator and “a most rec-

28. For a brief introduction to Giovanni Pico and other Renaissance eclectics and for the standard literature on these topics, see Copenhaver and Schmitt, *Renaissance Philosophy*, ch. 3.

29. Max Wundt, *Die deutsche Schulmetaphysik des 17. Jahrhunderts*, 142. Leinsle offers the best general account of Thomasius' life and work. See Leinsle, *Reformversuche protestantischer Metaphysik*, 139–149. Although Detlef Döring does not describe the rich philosophical proposals made by Thomasius and his colleagues, he suggests that the university in Leipzig was not exactly a center of “sterile traditionalism.” See his helpful *Der junge Leibniz und Leipzig: Ausstellung zum 350. Geburtstag von Gottfried Wilhelm Leibniz im Leipziger Alten Rathaus*, passim. I thank Ursula Goldenbaum for acquiring this book for me.

ognized" philosopher;³⁰ Leibniz describes him as "the most celebrated German Peripatetic,"³¹ and often refers to him as "our most famous Thomasius."³² We can glean from Thomasius' many publications the philosophical and methodological lessons that he taught his students.³³ First and foremost, Thomasius was a conciliatory eclectic who rejected both syncretism and the ancient theology. He believed that the true philosophy could be constructed from the raw materials of apparently diverse philosophical schools, but he insisted that those raw materials be chosen with great care. As a discriminating eclectic, both his method and goal were different in their details from Pico and many other humanists. Thomasius complained bitterly about the propensity among his predecessors and colleagues to collect ideas without thorough analysis, to assume that all philosophical schools could be made to cohere, and then to force a synthesis among doctrines where there was none. It is important to grasp the subtlety of Thomasius' approach to history. He believed that ancient philosophers offered the primary raw materials for the proper conciliatory philosophy, but he was prepared neither to force their ideas into Christian doctrine nor to accept the mistaken interpretations of their ideas promulgated by the less discriminating humanists. He saw the need to take the texts of Aristotle and other historical figures on their own terms.³⁴ The result of this historically informed analysis of ancient philosophy was to make the "true" views of the ancients available for careful scrutiny. Once the ancient doctrines were properly interpreted, they could be thoroughly evaluated. The evaluative procedure involved two separate steps: first, the Christian orthodoxy of the doctrine had to be noted, then both its philosophical merit and potential for reconciliation among philosophers had to be appraised. For example, Thomasius' *Exercitatio de Stoica Mundi Exustione* of 1676 is an extended unveiling of the heresies of the Stoics.³⁵ He makes a thorough analysis of Stoic philosophy, compares its tenets to those of the Platonists, Aristotelians, and Epicureans, and then identifies its "many errors." In the

30. Sturm, *Philosophia Eclectica*, 72f. 31. VI ii 426.

32. VI i 186; see also VI i 300. Although Guhrauer claimed in 1842 that Thomasius began the "scientific study of the history of philosophy in Germany," there has been no thorough treatment of Thomasius' thought. For example, Beck's enormous *Early German Philosophy* offers no discussion of him; and Robinet, in his grand study of Leibniz's philosophy, does not mention Thomasius' philosophy except to suggest briefly that Leibniz inherited certain concerns about Aristotelian thought from his teacher. The little scholarly work that has been done has categorized Thomasius merely as one of the more interesting "protestant Aristotelians." See Guhrauer, *Gottfried Wilhelm Freiherr von Leibnitz*, Vol. I, 27f; Robinet, *Architectonique disjonctive*, 114, 126f; Wundt, *Die deutsche Schulmetaphysik* 142-43; Petersen, *Geschichte*, 341-44; and Leinsle, *Reformversuche*, 139-149. Leinsle places Thomasius among the German "anti-scholastic Aristotelians," but does offer a helpful overview of that part of Thomasius' philosophical interests.

33. For a sense of Thomasius' wide-ranging publications, see the Bibliography.

34. See, e.g., Thomasius, *Dissertationes LXIII & Varii Argumenti Magnam Partem ad Historiam Philosophicam & Ecclesiasticam Pertinentes*, 466, 478f.

35. The full title of the work is *Exercitatio de Stoica Mundi Exustione: Cui Accesserunt Argumenti Varii, sed inprimis ad Historiam Stoicae Philosophiae Facientes, Dissertationes XXI*.

process of identifying the heretical views of the Stoics, he clarifies those Platonist and Aristotelian doctrines that conform to Christian teachings. Only through the careful analysis of the views of the ancients could we recognize the difference between “the light of true doctrine” and “the shadows of the pagans.”³⁶

Thomasius had no doubt about the superiority of Aristotelian philosophy, but he subjected that philosophy to the same scrutiny that he applied to other ancient sources. He was fond of reminding his students that however brilliant Aristotle might have been, he was a pagan whose philosophical insights lacked the full aid of “divine light.”³⁷ Thomasius writes in his *Exercitatio*, for example: “those people who repeat the same old song that the ancient Aristotle can be reconciled with sacred scripture . . . should be met with derision.”³⁸ For Thomasius, it was an important though arduous task to uncover Aristotle’s real views. As many humanists had done before him, he argued that the bad translations of Averroës and the misinterpretations of the scholastics had made the excavation of the real Aristotelian philosophy especially difficult.³⁹ But he also insisted that the philosophy of Aristotle, once properly understood, had enormous merit. According to Thomasius, for example, the true importance of the *Nicomachean Ethics* had long been hidden behind the misinterpretations of the scholastics. By offering his own translation and edition of the Greek text, he hoped that Aristotle’s position might “bring some agreement” about ethical matters.⁴⁰ He maintains that Aristotle’s ethical proposals offer nothing less than the basis for the perfection of humanity.⁴¹ In a book on physics of 1670, he begs his contemporary natural philosophers to discover the truths that underlie Aristotle’s conception of nature and that have been ignored for too long.⁴²

The favoritism that Thomasius showed to Aristotelian thought did not prevent him from making good use of other philosophies. His eclectic mixture contained large parts of Platonism and, to a lesser degree, other ancient ideas. It did not, however, make significant use of contemporary philosophy: the major raw materials for Thomasius’ conciliatory concoction were almost exclusively ancient. This conservatism was coupled with an impressive erudition. Thomasius’ texts display a familiarity with a wide range of philosophical schools and doctrines, both Renaissance (e.g., Luther, Steuco) and ancient (e.g., Parmenides, Democritus), Christian (e.g., Augustine, Origen) and Jewish (e.g., Philo, Maimonides). Although Thomasius clearly has some knowledge of mechanical philosophers like Descartes, Gassendi, and Hobbes, he does not take seriously their physical proposals. He writes to

36. Thomasius, *Exercitatio*, 3–4, 21–22. 37. Thomasius, *Schediasma*, 5–13.

38. Thomasius, *Exercitatio*, 22.

39. Thomasius, *Breviarium Ethicorum Aristotelis ad Nicomachum*, 75.

40. *Ibid.*, 72f. 41. *Ibid.*, 82.

42. Thomasius, *Physica, Perpetuo Dialogo*, Praefatio. Leibniz thought very well of this book, which was first published in 1670 but went through other editions. For Leibniz’s response to the text, see the introduction of ch. 6.

Leibniz at one point that he “despises” their thought.⁴³ His strongest disapprobation, however, is saved for the promoters of the ancient theology who “have wrapped that [Platonist] philosophy in mystery and obscurity.”⁴⁴ In his *Schediasma*, he insists that “it is a fiction that Platonism is the closest of ancient philosophies to Christianity.”⁴⁵ According to Thomasius, the central position assigned to Plato by so many humanists is based on a mistaken interpretation of his thought:⁴⁶ once we take Plato on his own terms, we discover that he was mistaken about a number of important points. It will be important to our discussion of Leibniz’s Platonism in chapters 5 and 6 that in Thomasius’ view, it is Plotinus who reveals the real significance of Platonist teaching. Although Thomasius insists that Aristotle has more to offer in most areas of philosophy than does Plato,⁴⁷ he admits that the Platonist tradition is an important source of truths, especially about God’s relation to the created world.⁴⁸ For example, in his *Exercitatio*, Thomasius agrees with the Platonists against the Stoics in their account of “the flowing of creatures from God.”⁴⁹ We will say more about the details of Thomasius’ Platonism in chapter 5. For now, the point to emphasize is that despite the favor he displays for the philosophy of Aristotle, Thomasius happily accepts Platonist tenets.

For Thomasius, the goal of his conciliatory eclecticism is the construction of the true philosophy firmly rooted in Christianity. In his *Schediasma*, he congratulates Luther for having understood that the ultimate sources of truth are the Bible and the doctrines of the church.⁵⁰ But Thomasius also maintains that as long as we carefully distinguish between sacred and profane doctrine and remain alert to the heretical teachings of both Christian and pagan authors, we can construct a philosophy out of Christian and pagan texts. However misguided some humanists might have been in their account of philosophical history and historical texts, their fundamental belief in the wisdom of the ancients was sound. Thomasius insists in his *Schediasma* that “there has been abundant pouring forth of divine wisdom” in ancient philosophy, and that the profundity of the Aristotelian philosophy is due to the fact that Aristotle, more than any other philosopher, understood that “God speaks through the book of nature.”⁵¹ For Thomasius the wisdom of Aristotle, Plato, and the other ancient philosophers is primarily due to their capacity to use their intellect to discern God in nature. He asserts

43. II i 13. For Thomasius’ familiarity with recent philosophy, see Thomasius, *Physica*, (1705) 69–87; *Origines Historiae Philosophicae & Ecclesiasticae*, 14; and *Dissertationes*, “De statu naturali adversus Hobbesium,” of 1661.

44. Thomasius, *Dissertationes*, 478. Leibniz echoes the view of his teacher when he writes many years later: “Ficino speaks everywhere of ideas, the Soul of the world, Mystical Numbers, and similar things, but does not give precise definitions in the way that Plato did concerning these notions” (G I 380).

45. Thomasius, *Schediasma*, 38. 46. *Ibid.*, 52.

47. Thomasius, *Dissertationes*, 465–80.

48. Thomasius, *Schediasma*, 1–6; *Exercitatio*, 196–99, 292.

49. Thomasius, *Exercitatio*, 249–52. 50. Thomasius, *Schediasma*, 74.

51. Thomasius, *Dissertationes*, 479.

in the preface to his dialogue on physics (which is thoroughly Aristotelian) that “God himself” may be revealed through “the study of nature.” He explains that “there is the most elegant nexus among things and the finest order [which acts] as a ladder for us with which to ascend to God.” Because this order “reveals the most sacred light . . . and the glory of the supreme Craftsman, it can be used to dispel atheism. Indeed, whoever spies the single harmony and beauty of ends will therefore glimpse . . . the Wisdom of the most Benevolent Architect.”⁵² For Thomasius, the wisdom of the ancients was based on the fact that they had been able to ascend that ladder, or at least part of it. Therefore, the true conciliatory eclecticism would be built out of Christian doctrine and ancient insights so acquired.

Thomasius’ conciliatory proposals are a disappointment. In his letter of April 1669 to Thomasius, Leibniz congratulates his teacher on his *Origines Historiae Philosophicae et Ecclesiasticae* and insists that, unlike many other (humanist) authors who are skilled “more in antiquity than in theory and have given us lives rather than doctrines,” Thomasius has given us a “history of philosophy and not of philosophers.” According to Leibniz, his teacher presents “profound reasons” for the “interconnections among doctrines” and has not given “a mere enumeration” of ideas.⁵³ Thomasius’ book is an extremely concise discussion of the origins of certain philosophical and ecclesiastical doctrines in which he attempts to trace present opinions back to their ancient origins. He typically explains how an ancient author solves a particular problem, and then lists the solutions proposed by more recent thinkers. His sources range from the Manichees and Apostles to the church fathers and Luther. One of the longest discussions concerns the question of whether the subject of metaphysics is *Ens* or *prima substantia*. In this case, Thomasius offers a variety of opinions (the majority of which are presented in one sentence summaries) and then accepts the opinion he attributes to Aristotle.⁵⁴ Despite Leibniz’s compliments, Thomasius does not give a thorough analysis of any of his topics and does not offer convincing arguments for his conclusions. In this and other books, Thomasius considers a doctrine plausible when it is both consistent with Christian teaching and has been proposed by a great philosopher; he considers it probable when it is a position of compromise or one on which a majority of philosophers will agree. A crucial part of Thomasius’ peace-making strategy is clarity of expression. He insists that the relevant historical doctrine be accurately rendered and that the philosophical terminology be manifestly clear. The demand for accuracy is a motif that runs throughout German texts of the period. Like many of his contemporaries, Thomasius believed that the intellectual and religious chaos would only be resolved when philosophy acquired a high degree of clarity.

Leibniz learned important philosophical lessons from Thomasius. But before we investigate exactly what the young man took from his teacher, it will be helpful to document the other prominent methodological proposals

52. Thomasius, *Physica*, Praefatio. 53. VI ii 433: L 93. 54. Thomasius, *Origines*, 12f.

that Leibniz faced. It is noteworthy that Johann Adam Scherzer (1628–83), one of Thomasiaus' colleagues at the University of Leipzig, was much more inclusive in his eclecticism. Although Scherzer drew from the esoteric sources used by Renaissance syncretists, he strongly protested against “the Mystery of the most wicked Syncretism.”⁵⁵ As Professor of Philosophy, Hebrew, and Theology, Scherzer was a leading figure at the University of Leipzig in the early 1660s.⁵⁶ The frontispiece of one of his textbooks speaks a thousand words about his methodological views. In an elaborate engraving at the beginning of his *Vade Mecum sive Manuale Philosophicum Quadrupartitum*, we find two robed figures – one marked Aristotle, the other Plato – who jointly hold a sphere on which a triangle is inscribed. The triangle, a symbol of the trinity, emits rays of light that fall on a lone stag, a symbol of the faithful Christian. In the textbook, Scherzer offers his readers a sketch of a metaphysical system that is supposed to lead to philosophical agreement, Christian faith, and religious harmony. Scherzer describes both the crisis of his time and his proposed remedy. He bemoans the fact that there is so much disagreement among the faithful and so many “pernicious theological controversies.” The only way out of this state of intellectual chaos is to forge an agreement among thinkers by means of careful definitions and proper methodology. For Scherzer, the key to reconciliation is the careful “[d]efinitions of Things, so that we philosophize with one voice and one mind.”⁵⁷ With sources ranging from Aristotle, Aquinas, and Suárez to Plato, Porphyry, and Augustine, he attempts to give a thorough analysis of the basic elements of philosophy. In his eclectic concoction, Scherzer relies most heavily on Aristotelian tenets in the areas of metaphysics and physics, but turns to Platonist notions as soon as the discussion shifts to God and the relation between the divine and mundane.⁵⁸ For our purposes here, it is important to emphasize that, according to Scherzer, the objects of knowledge are the attributes of God, which are like Platonic Ideas. According to

55. Scherzer, *Collegii Anti-Sociniani*, Praefatio d2 (v).

56. Almost no work has been done on Scherzer. For the few scholars who do mention him, he is merely a conservative “protestant Aristotelian.” See Wundt, *Die deutsche Schulmetaphysik*, 141f; Petersen, *Geschichte der aristotelischen Philosophie im protestantischen Deutschland*, 341–42; and Leinsle, *Reformversuche protestantischer Metaphysik*, 20–26. Leibniz studied with Scherzer and refers approvingly to him. See II i 15. According to Döring, Leibniz acquired a copy of Scherzer's textbook, *Vade Mecum*. See Döring, *Der junge Leibniz und Leipzig*, 85. In fact, Scherzer is generally more interested in kabbalistic and Platonist thought than in the philosophy of Aristotle. Although Leinsle notes that Scherzer borrows ideas from Plato, he does not explore the conciliatory aspect of his philosophy. For a summary of Scherzer's methodological concerns, see my “Humanist Platonism in Seventeenth-Century Germany.”

57. Scherzer, *Vade Mecum*, Dedicatio [iv]. The frontispiece is reproduced in my “Humanist Platonism in Seventeenth-Century Germany.”

58. In chapter 5, I will discuss the Platonist sources of some of Leibniz's ideas about God's relation to the world, and it will be more appropriate in that context to discuss some of the details of Scherzer's Platonism. The division of labor between Aristotelian and Platonist philosophies is standard among seventeenth-century eclectics and, as I will document in chapters 6–10, was promulgated by Leibniz.

Scherzer, the mind of God contains the Platonic Ideas or archetypes, the creatures of the world are instantiations of these Ideas; and the human intellect is capable of acquiring knowledge of these Ideas.⁵⁹ Moreover, these Ideas form the basis for true definitions and accurate demonstrations. According to Scherzer, the correct method is one that orders these truths properly so that “knowledge of the whole” is acquired.⁶⁰ In sum, one of the most prominent professors in Leipzig in the early 1660s was a well-known and popular supporter of conciliatory eclecticism who demanded clarity in definitions and care in argumentation.

In the summer semester of 1663, Leibniz went to Jena to study with Erhard Weigel (1625–99), Professor of Mathematics in Jena. Besides Thomasius, Weigel was Leibniz’s most influential teacher and, unlike Thomasius, embraced the mechanical philosophy. The degree to which Weigel influenced the young Leibniz’s ideas about logic has been much discussed.⁶¹ In chapter 3 (section 1), I will present some of Weigel’s specific metaphysical proposals as part of the background to Leibniz’s early metaphysics. What concerns me here is the methodology of Weigel’s most important book, *Analysis Aristotelica ex Euclide Restituta*, of 1658. Rejecting the sectarianism of both scholastic and contemporary philosophers, he chooses a conciliatory approach. According to Weigel, the present unfortunate state of philosophy is due to ignorance on the part of the scholastics about the proper mathematical method. As he explains in his *Dedicatio*, with the rediscovery of the thought of Euclid and the perfected mathematical method that it engendered, we now possess the key with which to enter “the most valuable Palace of that very ancient philosophy.”⁶² By applying the mathematical method to all the parts of philosophy, Weigel proposes to remove philosophy from its present “ruins” and to construct a single coherent and true system. In his Preface, he explains that his ultimate goal is “first and foremost” to present what is “true, real, and most accurately demonstrated.” But he insists that “the most accurate way and method” to the truth is that “of the ancient philosophers.”⁶³ According to Weigel, “to-

59. Scherzer, *Vade Mecum*, Part I, 137. 60. *Ibid.*, Part I, 131–36.

61. It is noteworthy that (1) Thomasius and Scherzer do not condone the mechanical philosophy, while Weigel does; (2) although scholars have not taken seriously the thought of Thomasius and Scherzer, they have studied the philosophy of Weigel; and (3) the analyses that have been made of Weigel’s influence on Leibniz have focused on the former’s “modern” aspects. For those scholars who have hypothesized about the influence of Weigel on Leibniz, see Petersen, *Geschichte*, 348–51; Mahnke, *Leibnizens Synthese*, 371f; Belaval, *Initiation*, 38; Hannequin, “La première philosophie,” 19; Fischer, *Gottfried Wilhelm Leibniz*, 40; Moll, *Der junge Leibniz*, passim; and Leinsle, *Reformversuche*, 63–87. Moll accurately describes Weigel as a “Platonized Aristotelian” within “a mechanical wrapping” (49f), while Leisle recognizes Weigel’s program of “mathematical pansophy” (63) and offers a good general summary of a part of his thought. Although it is true that Leibniz was interested in Weigel’s mathematical and physical proposals, he was equally interested in Weigel’s methodological proposals, which were very similar to those of his professors in Leipzig. For a summary of Weigel’s method and a comparison of it to Scherzer’s, see my “Humanist Platonism in Seventeenth-Century Germany.”

62. Weigel, *Analysis*, *Dedicatio* (iv). 63. *Ibid.*, 2.

day it is possible to abandon the ignorance of the former [scholastic] philosophers” and “to complete” the work begun “by the ancients.” It is to this end that his book “is chiefly directed.”⁶⁴ Two of Weigel’s proposals are especially relevant here. First, his conciliatory system is a complicated mixture of Platonist, scholastic, and mechanical ideas placed squarely on Aristotelian foundations. He explains that it was Aristotle who first “laid down the mathematical steps to human knowledge,”⁶⁵ and that some of the insights of the new philosophers (e.g., Descartes) are merely extensions of Aristotelian ideas. Second, Weigel is even more insistent than were Thomasiaus and Scherzer that clarity in both definition and argumentation is the bedrock of the true philosophy. Weigel asserts: “Our intellect” is able to know these truths “which are favors of the extraordinary Divine Power”; once the intellect “knows them in a very direct way” – that is, “as they are in themselves” – it will see that they are the beginning of all knowledge.⁶⁶

3. The woods revisited

Against this historical background, we are now in a position to reevaluate Leibniz’s youthful philosophical development. The precocious young man matriculated at the University of Leipzig in April 1661, three months before his fifteenth birthday and two years before he wrote the *Metaphysical Disputation on the Principle of Individuation*. Accordingly, the recollection of his walk as he describes it to Remond in 1714 places his decision within weeks of the commencement of his university study. Leibniz was of sound mind in 1714. This was the year he composed the *Monadology* and wrote many other letters and notes. It is unlikely that he would forget whether something so noteworthy as the commencement of his university studies had happened at about the same time as the Rosental decision, or three years before. Moreover, there is at least one other text in which Leibniz describes his meditative walk. He writes in 1697: “for I began very young to meditate and I was not quite fifteen years old when I wandered for whole days in a grove to choose between Aristotle and Democritus.”⁶⁷ Even on the basis of this fairly limited evidence, it seems likely that Leibniz made his transforming stroll in the spring or summer of 1661, at least two years before he wrote his scholastic thesis, the *Metaphysical Disputation on the Principle of Individuation*.

After his peripatetic decision, Leibniz did begin to apply himself to the mechanical philosophy. Previous commentators have attended almost exclusively to the fact that by the middle of the decade Leibniz accepts a mechanical account of bodies and that in articulating his views about bodies he relies more heavily on ideas out of Gassendi and Hobbes than on other modern authors. It has been noticed that Leibniz does not settle on one account, and the assumption has been that the young man is undecided about

64. *Ibid.*, 94f. 65. *Ibid.*, 4. 66. *Ibid.*, 108–09.

67. G III 205. I thank Donald Rutherford for first bringing this text to my attention.

his metaphysical goals. While it is perfectly obvious that in the mid-1660s Leibniz does not yet have a fully formulated metaphysics, he nonetheless has very definite philosophical objectives. Before delineating those goals and finally describing the full significance of the Rosental decision, it will be helpful to identify four features of the texts of the period that offer clues to Leibniz's philosophical intentions.

First, Leibniz almost always combines his mechanical proposals with ideas from a variety of other sources, especially from Aristotle. The only exception to this is a letter to Thomasius of February 1666 in which he refers to Hobbes and gives a Gassendian account of perception.⁶⁸ We need not, however, take this absence of Aristotelian elements as proof of Leibniz's whole-hearted mechanism, or of much else. The letter reads very much like an exercise that the student prepared for his illustrious teacher. It consists, in its twenty-six line entirety, of a solution to a paradox first proposed by Anaxagoras about the possibility of black snow. Leibniz begins with the hypothesis that color is only an idea and not a quality in things. He then uses this hypothesis, along with some Gassendian principles, to solve the paradox.⁶⁹ There would be reason to take this position as somehow representative if Leibniz continued to make important use of these same principles. He does not; and there is little reason to believe that Leibniz was particularly wedded to Gassendi's views on perception, or to Gassendi's philosophy for that matter. Another reason for not generalizing from this one instance is that Leibniz was soon to publish *On the Combinatorial Art*. Because this work uses the Aristotelian account of cause, analyzes Aristotelian primary qualities in mechanical terms, and presents Aristotle's notion of the mean, there is little justification for thinking that Leibniz had given up combining ancient ideas with mechanical ones.

The second significant feature of the texts of the 1660s is that Aristotle is the single most important source of the young man's ideas. In his notes, writings, and letters between 1663 and 1672, Leibniz refers to Aristotle some 151 times compared with 98 references to Hobbes and 33 to Gassendi. But what is more important than just numbers is the kind of references these are. To show the certainty of a principle or the truth of an opinion, Leibniz often considers it sufficient simply to note that it was accepted by the "most profound Aristotle."⁷⁰ A reference to Aristotle seems to constitute its

68. Scholars have made much of this letter. Kabitz used it as evidence that by 1666 Leibniz had finally rejected his youthful Aristotelianism; Kabitz and many others have taken it as proof of his commitment to Gassendi. See e.g. Capek, "Leibniz's Thought prior to the Year 1670;" Belaval, *Initiation*, 33; Kabitz, *Die Philosophie des jungen Leibniz*, 51f; Hannequin, "La première philosophie," 24ff.

69. II i 4–5. For Gassendi's treatment of the paradox, see *Syntagma Philosophicum* in *Opera omnia*, I, 318ff. For a summary of the problem as Gassendi understood it, and for an excellent account of Gassendi's eclectic concoction of Christian theology, Epicurean atomism, and "modern" physics, see Margaret Osler, "Ancients, Moderns, and the History of Philosophy: Gassendi's Epicurean Project."

70. See, for instance, VI i 84, 199; VI ii 195, 275.

own kind of rhetorical argument. The vast majority of these concern ethical and legal topics, but many pertain to issues in natural philosophy, the area where the new mechanical physics would naturally have its strongest influence. When Leibniz disagrees with an Aristotelian doctrine, it is often because it clashes with Christian orthodoxy.⁷¹ The most damaging criticism Leibniz can muster against the Philosopher during this time appears in his letter to Thomasius of April 1669: "For the most part Aristotle's reasoning about matter, form, privation, nature, place, infinity, time, and motion is certain and demonstrated, almost the only exception being what he said about the impossibility of a vacuum and of motion in a vacuum."⁷² If Leibniz could not bring himself to criticize Aristotle seriously, he had no such problem in disagreeing with philosophers like Hobbes.⁷³ Even Leibniz's letter of July 1670 to Hobbes reveals his greater regard for Aristotle. After noting some problems that he thinks Hobbes' conception of body may face, he defers to Aristotle on a topic concerning body.⁷⁴ Both here and in the other 150 references to Aristotle, Leibniz takes the ancient to be the final word on most topics, even those concerning physical matters.

The final two features of the texts are interestingly related. Although each of these was mentioned in section 1, they take on new significance against the historical background presented in section 2. Throughout the 1660s, Leibniz refers to a startling array of ancient, medieval, Renaissance, and early modern thinkers. His works often include paragraph-long lists of references to philosophical doctrines, schools, and texts from a huge variety of contemporary and historical sources. Leibniz puts his views succinctly when he exclaims in a letter of 1671: "Let us shed prejudices and support geniuses of all ages."⁷⁵ He seems to have consumed books and ideas with a ferocious appetite, and is happy to use them whenever possible. The sheer number of references to philosophers whose fame did not survive the century has acted as a deterrent to a thorough study of the period. Not surprisingly, twentieth-century scholars have focused on the young Leibniz's references to philosophical heroes like Gassendi, Descartes, Bacon, and Hobbes. But, in fact, the majority of Leibniz's references to contemporary sources fall into one recognizable group: conciliatory eclectics. The young man saves his most flattering remarks for those intellectuals who promote conciliation, and he criticizes those contemporaries like Descartes and Hobbes who do not.⁷⁶ His works make it abundantly clear that the young Leibniz had a keen interest in conciliatory eclectics, both past and present.

The contemporary eclectics to whom Leibniz most frequently refers include: Johann Heinrich Alsted, Johann Althusius, Johann Heinrich Bisterfeld, Jean Bodin, Johann Amos Comenius, Hugo Grotius, and Athanasius Kircher. Alsted, Althusius, Bisterfeld, and Comenius were all educated in

71. E.g., VI i 84. 72. II i 15; L 94.

73. See VI i 490; L 110, VI ii 428; L 128, VI ii 432; L 130. 74. II i 57; L 107.

75. II i 95. Also see VI ii 27-31, 421-26, 114; II i 38, 79, 83, 94, 176; VI i 187, 219, 264, 265.

76. E.g., VI ii 126, 149, 413, 425-27; II i 14-15, 50, 57-58, 79-80.

the German town of Herborn, where they acquired a syncretic commitment and a millenarian hope.⁷⁷ At the center of their thought was a concern for education and the assumption that when properly educated, everyone would come to see the truth. For these thinkers, the truth was firmly rooted in Christian theology and a belief in universal harmony. The other philosophers in this group – Bodin, Grotius, and Kircher – were also committed conciliatory eclectics who thought that the proper approach to the wide diversity of religious and philosophical alternatives was to transcend the controversies, ignore the apparent differences, and to find the common denominator among the disputants. Grotius agreed with the Herborn philosophers that Christianity was the religion of truth and that the first step toward true wisdom for the non-Christian was conversion.⁷⁸ Bodin and Kircher appear to have been more radical: each was sympathetic to other religions and each promulgated the idea that the non-Christian faiths had glimpsed the truth. In Kircher's words, "all peoples have an idea of the Principle of all things."⁷⁹ Kircher's sympathy for other religions, however, did not lead him too far astray: throughout his many books he remains committed to the superiority of the Roman Catholic faith. Bodin's proposals were much more extreme. He not only criticized the sectarianism of organized religion, he was prepared to claim that none of the extant religions had special access to knowledge of the divine. In his fascinating dialogue, *Colloquium Heptaplomeres*, on which Leibniz took copious notes in 1668–69, he maintains that "the causes of things are difficult [to discover] and lie hidden in the mysteries of nature."⁸⁰ He proposes that the truth about mundane and divine matters can be attained, but that none of the diverse religions has greater claim to them. According to Bodin, whatever one's religion, it was possible to discover the underlying truth in God's world and thereby to gain a harmony both with the universe and with its maker.

Given the enormous complexity of the philosophical debate during the second half of the seventeenth century, it should not be surprising that Leibniz's texts are brimming with references. Not only did Leibniz and his

77. For a general introduction to the Herborn school, see Loemker, "Leibniz and the Herborn Encyclopedists." In "Der Begriff der Harmonie als metaphysische Grundlage der Logik und Kombinatorik bei Johann Heinrich Bisterfeld und Leibniz," Massimo Mugnai has argued convincingly that Bisterfeld had a significant influence on the development of the young Leibniz's views about logical and epistemological issues. This is surely true. But what has not been fully explored is the influence of the other Herborn philosophers. It is likely that Alsted had at least as much influence on the evolution of Leibniz's thought more generally.

78. Grotius' *De Veritate Religionis Christianae* of 1627 was very influential. Leibniz cites Grotius' writings throughout the 1660s. See VI ii 682 for the whole list of citations.

79. Kircher, *Turris Babel*, 136; see also *Oedipus Aegyptiacus*, vol. II, 193. Kircher is especially sympathetic to other faiths in the latter three-volume work, but he nonetheless believes in the superiority of the Christian (for him, Roman Catholic) faith. For a recent scholarly treatment of Kircher, see Thomas Leinkauf, *Mundus Combinatus: Studien zur Struktur der barocken Universalwissenschaft am Beispiel Athanasius Kirchers SF (1602–1680)*.

80. Jean Bodin, *Colloquium Heptaplomeres de Abditis Rerum Sublimium* 13.

contemporaries inherit both Renaissance humanism and the variety of philosophical sources promulgated by the humanists, they also had to contend with the new natural science and the new religious controversies. There had evolved a startling number of philosophical options, each with its ardent followers, and a wide array of religious zealots who argued passionately against one another. It was common for philosophers of the period to complain, as did Scherzer: "there are as many definitions as definers . . . , as many philosophies as philosophers."⁸¹ In the face of such intellectual chaos, it is not surprising that conciliatory eclecticism was the favorite methodological choice of many. As much as these conciliatory eclectics differed in the details of their proposals, their basic assumptions are strikingly similar: each is committed both to the goal of intellectual harmony among the philosophical and religious sects and to the idea that the harmony evident in God's world guarantees intellectual concord. In Bodin's words, "just as the different natures of singular things combine for the harmony of the universe," so can "the individual citizens" combine "for the harmony of all peoples."⁸²

The final point to emphasize about Leibniz's philosophical interests during the period is the pivotal role that Jakob Thomasius played in their formation. Not only was Leibniz greatly impressed by his illustrious teacher from the beginning of his university studies, he articulated some of his most important metaphysical and methodological ideas in their correspondence. In a fascinating passage written in the 1660s, Leibniz describes a crucial phase in his early development and offers what is almost certainly his first autobiographical sketch:

As soon as I arrived at the Academy, by a rare fortune I met, as a Master, the well-known J. Thomasius who, *although he did not accept my doubts and was very little disposed to let me do such a reform of the substantial, incorporeal forms of bodies*, engaged me very strongly to read Aristotle, announcing to me that, when I would have read this great philosopher, I would have a wholly different opinion than that offered by his scholastic interpreters. I soon acknowledged the wisdom of this advice and saw that between Aristotle and the scholastics, there was the same difference as between a great man versed in the affairs of state and a monk dreaming in his cell. I therefore took of Aristotle's philosophy another idea than the common one. . . . Aristotle seemed to me to admit, more or less like Democritus or, in my time, like Descartes and Gassendi, that there is no body which can be moved by itself.⁸³

81. Scherzer, *Vade Mecum*, Dedicatio [iii-iv].

82. *Colloquium Heptaplomeres*, 166. Bodin's work was not published during his lifetime, and Leibniz, like many scholars, read it in manuscript form. For a general account of Bodin's views, see the introduction to the *Colloquium of the Seven about the Secrets of the Sublime* by M.L.D. Kuntz. Leibniz refers to the *Colloquium* and other works by Bodin throughout his youth (see VI i 32, 285; II i 14, 66, 176). While it is clear that Leibniz was impressed with Bodin's erudition, he was also frightened by his religious syncretism. In the letter of April 1669 to Thomasius, he says that Bodin's dialogue is anti-Christian and should not be published (II i 24).

83. Foucher de Careil, *Mémoire sur la philosophie de Leibniz*, 6f; my emphasis. This passage is found among the notes that Foucher de Careil collected, published, and subsequently lost. According to Foucher de Careil, the passage cited here was written during the 1660s (5).

Leibniz could not be clearer: soon after arriving at the university, he was concerned to reform the scholastic notion of substantial form (he may also have had other doubts about the Aristotelianism that he gleaned from his early education); under the advice of Thomasius, he began a more serious study of Aristotle than he had previously made, with the result that he went beyond the teaching of his master and decided that Aristotelian metaphysics could be reconciled with mechanism. It was under Thomasius' tutelage that Leibniz produced the *Metaphysical Disputation on the Principle of Individuation*. The preface that the master wrote for the piece nicely represents his approach to such topics: he presents a short history of the problem, gives a brief summary of the standard solutions, and then sides with one of them.⁸⁴ Thomasius' conclusion is interesting: he rejects Scotus' *haecceitas* in favor of the nominalist position of Suárez. Leibniz's dissertation shows the influence of his mentor in two important ways: it displays an impressive mastery of scholastic philosophy, especially of those schoolmen whom Thomasius deemed most valuable, and it accepts the nominalist solution of the master himself.⁸⁵ Leibniz's *Disputation* is exactly the kind of work an admiring student would produce for his illustrious adviser.

That Leibniz learned the conciliatory and humanist lessons of his teacher is clear. In a fascinating note written in 1671–72, under a pseudonym that announces his peaceful intentions (Wilhelmus Pacidius), Leibniz offers another autobiographical statement. Speaking of himself in the third person, he explains: "He first fell upon the Ancients, in whom at the beginning he understood nothing, and then something, and at last as much as was needed . . . ; he gained a sense not only of their language but of their thoughts." Unlike many of the modern humanists whose works are collections of "swollen words" and "borrowed opinions," the thoughts of the ancients "stood out strong and commanding," and "encompassed all of human life; their diction was clear, natural, fluid, and fitting to things." Their works made such an impression on the young man that "from that time forward he committed himself to two principles: always to seek for clearness in words . . . and usefulness in things."⁸⁶ There is no direct evidence as to

84. VI i 5–8.

85. Like many humanists before him, Thomasius distinguished between the good scholastics and the bad. See, e.g., *Dissertationes*, esp. "Adversus philosophos novantiquos;" *Origines*, 12–14. Leibniz's *Disputation* was a first-class piece of work. Kabitz describes it as a "virtuoso piece of scholastic philosophy" (49), and Wundt maintains that its survey of scholastic literature is well done, even for the time, *Die deutsche Schulmetaphysik* (143). For the most complete account of Leibniz's work, see Laurence B. McCollough, *Leibniz on Individuals and Individuation*, chs. 2–4.

86. VI ii 511. The remainder of this passage is interesting: Leibniz compares the ancients (*Veteres*) to his contemporaries (*recentiores*), about whom he felt "disgust." The picture he paints is rather different from that found in the later accounts of his development or even in the letter to Arnauld of 1671 (II i 169–181) which we will discuss in chs. 7 and 8. The lesson here is important: we should not take any one of the various accounts he gives of his philosophical development too seriously. When describing his intellectual history, as he does in the letters to Remond and in *A New System of Nature* of 1695, Leibniz often

the identity of these ancient thinkers, but on the basis of Leibniz's references and Thomasius' texts, we can infer that Leibniz learned as much as he could from his "brilliant" teacher about Aristotle, the "better" Aristotelians, Plato, and the Platonists.

These four features of Leibniz's early works make one thing immediately clear: Leibniz was not just a hard-working mechanist in the 1660s. To isolate his reflections on the mechanical philosophy is to ignore what is most important about the period. At the same time that Leibniz was studying the mechanical philosophy, he was also applying himself both to ancient and conciliatory philosophy. The fact that he could make his Rosental decision in 1661, write his *Metaphysical Disputation on the Principle of Individuation* two years after that, and compose both the Thomasius letter of February 1666 (in which he discussed the possibility of black snow in Gassendian terms) and the *New Method for the Learning and Teaching of Jurisprudence* (in which he makes use of Baconian and Aristotelian doctrines) a year later tells us a great deal about the complexity and variety of Leibniz's interests during this time.⁸⁷

While Leibniz's Rosental decision does constitute a major turning point in the young man's development, it should not be characterized as a conversion from Aristotelianism to modernism. Although he rejected scholastic physics, he did not reject Aristotelianism. When Leibniz emerged from the Rosental woods, he had set himself a course on which he would remain throughout his youth: to construct a comprehensive and true metaphysics that would somehow be built out of the ultimate principles discovered beneath the various sects and within a generally Aristotelian framework. The reason his works are brimming with such a variety of references and his views on the nature of corporeality, for example, are constantly being recombined and reconsidered is that he was casting about for the key to his conciliation. As a careful conciliatory eclectic, he must search through the dominant philosophical options and attempt to find what is worthwhile in each; as a philosopher interested in combining the mechanical physics with Aristotelian metaphysics, he must discover the common denominator among the mechanical options in an attempt to achieve the proper mix.

It is not surprising that the works of the early 1660s are replete with a vast variety of opinions. There are two especially striking examples of Leibniz's eclectic tendencies. In 1663/64, Leibniz took detailed notes on Daniel Stahl's *Compendium Metaphysicae*. Stahl (1585-1654) had been a well-respected professor in Jena whose writings reveal philosophical acumen of a sort often not found in the textbooks of the period.⁸⁸ Leibniz's notes on

paints in broad strokes. The point of these stories is not so much to present the actual steps in his intellectual autobiography as to give his reasons for accepting some philosophical doctrines and to engage his readers. It is a mistake, then, to base one's history of Leibniz's philosophical development entirely on one or two accounts.

87. In the preface of the latter work, he refers to Plato, Socrates, Galileo, William Harvey, Descartes, Campanella, and a long list of lesser figures. See VI i 264f.

88. For a brief discussion of Stahl, see Wundt, *Die deutsche Schulmetaphysik des 17. Jahrhunderts*.

Stahl's text reflect the young man's propensity to collect rather than reject and indicate his indebtedness to Thomasius.⁸⁹ Although Stahl's book is a commentary on Aristotle's metaphysics, Leibniz brings an impressive array of authors and doctrines to the text. He refers to Aquinas, Hobbes, and Honoré Fabri regarding Stahl's discussion of *ens* and *essentia*, and mentions Hobbes in connection with the author's account of words. The young Leibniz obviously has opinions about Aristotle's views, and is prepared to criticize both the completeness and the accuracy of Stahl's account.⁹⁰ He also shows a real interest in Stahl's discussion of the nature and use of metaphysics.⁹¹ What is particularly revealing about Leibniz's comments is his propensity to compare ideas from a wide variety of sources.

Another important example of the young man's early eclectic goal is the *Specimen of Collected Philosophical Questions Concerning Law* of 1664. As the title suggests, Leibniz argues that students of jurisprudence cannot ignore metaphysics because in order to answer questions fundamental to law one must be acquainted with both divine and human matters. In the fashion of Thomasius, the young man gives a brief history lesson about jurisprudence, noting that some philosophers have taken it to be a purely practical discipline, while others want to place it within the purview of theology. Leibniz proposes a middle way.⁹² He then proceeds to discuss some of the great philosophical "mysteries" that are relevant to issues in jurisprudence. The seventeen questions discussed range from whether future contingencies are true or false⁹³ and whether the notions of justice and injustice apply to animals,⁹⁴ to what constitutes the principle of identity.⁹⁵ In his discussions, Leibniz collects ideas from the ancients (e.g., Protagoras, Plato, Galen), the late scholastics (e.g., Soto, Sanchez, Zabarella), Renaissance thinkers (e.g., Giovanni Pico), early modern conciliatory eclectics (e.g., Kircher, Alsted, Weigel, and especially Grotius), and moderns (e.g., Hobbes, Gassendi). Leibniz is especially happy to agree with the views of Aristotle,⁹⁶ but like Thomasius, he is prepared to criticize the ancient for his unchristian tenets.⁹⁷ Most often, Leibniz constructs his answers from the views of as many reputable sources as possible and, through his example, encourages the reader to seek a harmony beneath the intellectual discord and build a firm metaphysical foundation for the study of jurisprudence.

Nor is the *Specimen* Leibniz's only attempt during the period to speak about questions of education. Following in the footsteps of the Herborn philosophers noted in section 2, Leibniz proposes to reorganize the learning and teaching of jurisprudence. In his *New Method for the Learning and Teaching of Jurisprudence* of 1667, he develops a psychology and philosophy of education that includes an analysis of the philosophical basis for law. In this lengthy work, he refers to Plato, Aristotle, Bacon, Hobbes, Bister-

derts, 126–29 and Leinsle, *Reformversuche*, 10–20. Stahl's *Compendium Metaphysicae in XXIV Tabellas reductum* displays his scholarly Aristotelianism.

89. VI i 21–41. 90. See, e.g., VI i 39. 91. VI i 31f. 92. VI i 73f.

93. VI i 89. 94. VI i 83. 95. VI i 90f. 96. E.g., VI i 83. 97. VI i 84.

feld, Alsted, Comenius, Grotius, Scherzer, Thomasius, and Weigel in an attempt to construct a “harmony” in educational theory.⁹⁸ Echoing the claims of some of his contemporary eclectics, Leibniz suggests that “true justice” and intellectual harmony are merely parts of the “elegance and harmony of the world.”⁹⁹ Other works from the period, like the *On the Combinatorial Art* of 1666¹⁰⁰ and the notes on a text by Thomas White of 1668,¹⁰¹ also reveal his concern to find a common core within differing proposals and to combine ideas from myriad sources into a coherent mixture.

The tendency to collect and to compromise continues through the end of the decade and beyond. In his *On transubstantiation* of 1668, Leibniz compares his own account of substantial form with that of Zabarella, Averroës, and others, and contends that his notion of God is like that of Plato.¹⁰² In his *On prime matter* of 1670–71, he puts forward a theory of matter that he says is consistent with the views of Aristotle, Descartes, and Hobbes.¹⁰³

The key to understanding Leibniz’s thought in the 1660s (and much of what he did later) is to recognize that he practised a form of conciliatory eclecticism. In 1661, when Leibniz rejected the substantial forms in favor of mechanism, he was doing no more than opting for the better of two explanatory models in natural philosophy. He was by no means rejecting the whole of the Aristotelian philosophy. He did go on to study the mechanical philosophy, but he gave serious thought to other philosophical traditions as well. That his early works are brimming with borrowings from a wide range of sources, that most of his favorite authors are conciliatory eclectics, that Aristotle is his favorite source of ideas in general, and that he seeks to forge a compromise among the different schools should come as no surprise against the historical context set in section 2: the young Leibniz had learned the lessons of past and present conciliatory eclectics well.

Before I turn to the details of Leibniz’s methodology, it will be helpful to consider the proposals of a conciliatory eclectic whose views bear a striking resemblance to Leibniz’s own. Johann Christoph Sturm’s (1635–1703) *Philosophia Eclectica* of 1686 wonderfully represents what happens to the conciliatory methodology when it is charged with the task of assimilating the new natural philosophy. Like his conciliatory colleagues, Scherzer and Thomasius, Sturm bemoans the sectarianism of his time.¹⁰⁴ According to

98. VI i 261–364. 99. VI i 344. 100. VI i 168–230. 101. VI i 501–07.

102. VI i 510. 103. VI ii 279–80.

104. Sturm, *Philosophia Eclectica*, esp. 40–44, 184–86. Sturm’s works were widely read. Leibniz refers to him (e.g., I i 80) and his works (e.g., VI i 186, G IV 399, 504) throughout his life, but he does not specifically refer to *Philosophia Eclectica*. Because the latter was written in the 1680s, it could not have had any direct influence on Leibniz’s youthful development. Its significance for us lies in the fact that Sturm’s proposals bear a striking resemblance to those of the young Leibniz, are based on the same sources (e.g., Weigel, Thomasius, Digby, Kircher, Comenius, and De Raey), and thereby suggest the pervasiveness of such ideas in Germany in the mid-seventeenth century. In a forthcoming project, entitled ‘Divine Madness’: *Metaphysics, Method, and Mind in Seventeenth-Century Germany*, I examine this unexplored part of seventeenth-century philosophy.

Sturm, his period has reached a dangerous state of “envy and malice” because his contemporaries have been both arrogant in their own views and ignorant in their opinions of others. The Cartesians, who loudly proclaim that only they possess the way to truth, are especially guilty.¹⁰⁵ Sturm intends “to pounce upon those who are hostile to one another” – whether to the ancients, moderns, or skeptics – and to prove to such dogmatists that as long as they “do not open their eyes” to what is valuable in the other systems, they will remain “cut off” from the truth.¹⁰⁶ In the same way that a person “who wants to comprehend the globe cannot focus only on one part,” so a person who “wants to acquire real knowledge cannot be attached to one authority.” According to Sturm, the only means to “true wisdom” is to open ourselves to all sources and all methods.¹⁰⁷

Sturm promises to show his readers how “to break through the fortress of the concealed truth” so as to discover the “secret workings of Nature.” To this end, he demands only that they put aside the authority of any one thinker and take up the proper conciliatory method. This eclecticism does not propose “to collect ideas indiscriminately,” but rather requires that its practitioners “avoid blindness, . . . seek a variety of opinions,” be willing to use “any method,” and “extend” their minds “to the whole of Nature and Reason” so as “to recognize the truth and to distinguish it from the untruth.”¹⁰⁸ But how are we to know which philosophies are worth serious study? Sturm explains that when intellectuals all over Europe recommend a philosophy, it must be taken seriously: everyone is thereby obligated to get to the “heart” of it.¹⁰⁹ In his opinion, the most important authoritative leaders are Descartes, Gassendi, Plato, and Aristotle, but he also maintains that if we want to understand “the phenomena of Nature,” we must learn from “other great Men,” like Francis Bacon, Robert Boyle, William Harvey, Johannes De Raey, and Erhard Weigel.¹¹⁰ He applauds the advances of these modern thinkers and their new discoveries (e.g., the circulation of the blood), but insists that their contributions depend crucially on the work of the ancients and especially of Aristotle.¹¹¹ Although many of his contemporaries “have been taught” that Cartesianism “differs fundamentally from the Peripatetic philosophy” and that it “can be demonstrated” in a way the ancient system cannot, these are falsehoods promulgated by the “dictatorial Cartesian philosophy.” If his fellow Cartesians will but “open their eyes” and remove themselves from “this danger,” it will become clear that no single philosopher is sufficient when it comes to understanding “the whole wonderful immensity of Nature.” Rather, the “strength and power” of each must be combined into a coherent system.¹¹² The ancient wisdom must be combined with the new philosophy and its new discoveries and the various

105. Sturm, *Philosophia Eclectica*, 161–65. 106. *Ibid.*, 2–3. 107. *Ibid.*, 16–22.

108. *Ibid.*, 2–8. 109. *Ibid.*, 70f.

110. *Ibid.*, esp. 84–98, 117–19. De Raey is a reformed philosopher who will be discussed in chapter 3, sect. 1.

111. *Ibid.*, 41–42. 112. *Ibid.*, 186f.

philosophical sects combined into the "one true system."¹¹³ Only the proper eclectic philosophy can discover the truth among "the many and diverse" sources and then demonstrate "the one true and genuine philosophical foundation."¹¹⁴ He also recommends that his contemporaries put aside their "adversarial style" and take up a more modest means of presenting their ideas.¹¹⁵

With his eclectic method clearly articulated, Sturm attempts to use it in the remainder of his book. He proposes that many of the basic elements of the Cartesian and Aristotelian systems are fundamentally similar, and he explains that this has not been obvious due to the bad translations and inadequate interpretations of the ancient texts.¹¹⁶ He argues, for example, that Aristotle's conception of matter, when properly understood, can be seen to be the same as Descartes'.¹¹⁷ The point to emphasize is that Sturm, like many other philosophers of his generation, is prepared to extend his eclectic net to the new natural philosophies, to forge a synthesis of the ancient and modern systems, and to assume that the use of a modest mode of argumentation will facilitate intellectual concord. I will now argue that Leibniz practised what Sturm preached.

4. Leibniz's two-part method

Leibniz was profoundly influenced by the methodological pronouncements of Thomasius and as a young man embraced conciliatory eclecticism. Although he disagreed with his teacher on important details, he never wavered from a commitment to Thomasius' most basic proposals. At the most general level, Leibniz intended to forge a true metaphysics out of the materials of the great philosophical systems and to nudge wayward souls to that one unifying truth. To understand Leibniz's thought, it is necessary to grasp both the philosophical method that he used to obtain the truth and the rhetorical means he used to present it.¹¹⁸

Concerning the construction of the true philosophy, Leibniz agreed with Thomasius on many points. Like Thomasius, Leibniz demanded the careful distinction between heretical and non-heretical tenets in any philosophy. In this sense, he was a discriminating eclectic: he was prepared to accept for his eclectic mixture only those philosophical ingredients that, in his opinion, were strictly orthodox. Like his teacher, the young man was firmly committed to the wisdom of the ancients: the richness and profundity of their thought amply justified the use of their philosophies. In this sense, Leibniz

113. *Ibid.*, 189. 114. *Ibid.*, 189-192. 115. *Ibid.*, 23. 116. *Ibid.*, 76f.

117. *Ibid.*, 261-64. Sturm's proposals closely follow those of Johannes de Raey, whose views are discussed in ch. 3, sect. 1.

118. There have been several recent studies of Leibniz's method and his relation to the science of his contemporaries. Some of these are very helpful, but none identifies the crucial place that conciliatory eclecticism has in his early thought. See esp. François Duchesneau, *Leibniz et la méthode de la science*; and Kurt Nowak and Hans Poser, *Wissenschaft und Weltgestaltung*, in which there are several articles on Leibniz's early period.

was conservative: he thought more highly of past authors than present ones, and never relied too heavily on any philosopher who could be considered either modern or radical. While enormously impressed by Hobbes, Descartes, Gassendi, and other moderns, he always “corrects” them with the help of some ancient author. Finally, like his teacher, Leibniz’s favorite author was Aristotle, except when it came to the details of his conception of the relation between God and creatures. On this topic, Leibniz was a Platonist, as we will see in chapters 5 and 6.

In his methodological intentions, Leibniz differed from his mentor in two ways. First, he was more optimistic in his conciliatory goals. He assumed that regardless of historical period and religious commitment, people could grasp the most fundamental (divine) truths. Although he fully agreed with Thomasius that the underlying truths were consistent with Lutheranism, he was more confident than his predecessor about the possibility that non-Lutheran (and even the non-Christian) thinkers might attain knowledge of those truths. In this ecumenical optimism, Leibniz had more in common with German philosophers like Johann Heinrich Alsted and Athanasius Kircher than Thomasius. Chapter 2 contains ample evidence of Leibniz’s early conciliatory goals where his intention is to forge a harmony between the Protestants and Catholics.

Nor did Leibniz’s ecumenical optimism decrease over the years. A striking example of his more inclusive conciliatory tendencies is the fascination with Chinese thought he developed in the last two decades of his life.¹¹⁹ He wrote a number of letters on topics related to Chinese philosophy, religion, and mathematics, and he composed essays in which he argued that the ancient Chinese had grasped important (Christian) truths. In a fascinating and important work, composed in 1715–16 and entitled *Discourse on the natural theology of the Chinese*, he congratulates “the ancient sages of China” for their “quite excellent” philosophy, which “is pure Christianity, insofar as it renews the natural law inscribed in our hearts – except for what revelation and grace add to it to improve our nature.”¹²⁰ In a letter of 1700 to Joachim Bouvet, one of the Jesuit missionaries in China, Leibniz makes evident the scope of his ecumenical ambitions:

119. For the importance of Chinese culture in seventeenth-century thought more generally, see D.E. Mungello, “European Philosophical Responses to Non-European Culture: China.”

120. Daniel Cook and Henry Rosemont have done a great service in collecting, editing, and translating Leibniz’s most important texts on Chinese topics. The Introduction to their collection is an excellent account of some of the important philosophical issues surrounding what I have been calling Leibniz’s conciliatory eclecticism. See their *Gottfried Wilhelm Leibniz: Writings on China*, 1–44. The quotation here is from the *Discourse on the natural theology of the Chinese*, sects. 31–32: Cook and Rosemont, 104–05. There is no standard edition of this text, which was originally written for Nicolas Remond in French at the end of Leibniz’s life (1715–16) and which has been given a number of different titles. For a brief history of the manuscript and citations to other editions, see Cook and Rosemont, 33–34.

What you tell me of the traces of the true revealed religion among the ancient Chinese, which are to be found in their . . . classical books, seems to be considerable. I have always been inclined to believe that the ancient Chinese, like the ancient Arabs (witness the book of Job), and perhaps the ancient Celts (that is to say the Germans and Gauls) were far from idolatry, and were rather worshippers of the sovereign principle.¹²¹

Daniel Cook and Henry Rosemont have precisely identified the assumptions that motivate Leibniz's expansive ecumenism. Concerning his work on Chinese thought, they explain:

He wished to reconcile Catholics and Protestants, and to halt the internecine strife plaguing the European states of his day. He believed that China could assist in achieving this goal, his writings displaying the following pattern of reasoning: my philosophy is fully compatible with those elements of Christian theology on which there is a large measure of agreement between Catholics and Protestants; my philosophy is fully compatible with (early) basic beliefs of the Chinese; therefore Chinese basic beliefs are fully compatible with those basic beliefs shared by Catholics and Protestants, and therefore in turn those Christian doctrines in dispute between Catholics and Protestants should be seen as relatively unimportant in the larger scheme of things, and can be adjudicated to the satisfaction of all on the basis of reason – with a resultant international peace and harmony among and between all the world's peoples.¹²²

There can be little doubt that at the end of his long life, Leibniz took himself to have grasped the truth on the basis of which universal peace could be made. What I argue here is that his early desire to do this helps to explain the steps that he took in his philosophical development.

But Leibniz was not a “wicked” syncretist, collecting ideas willy-nilly.¹²³ Like Thomasius, he was keen to identify and reject heretical doctrines. While he intended his philosophy to appeal to all, he firmly believed that unorthodox positions were neither true nor ultimately attractive. He therefore carefully selected only the soundest of materials from the great philosophical systems. Once these were identified, he committed himself wholeheartedly to them, happily ignoring the rest. Leibniz's selection process is evident in his attitude toward the ancients: he embraces what he

121. Quoted in Walker, *The Ancient Theology*, 199. The story of the Jesuit missionaries in China is a fascinating one that I cannot summarize here. Suffice it to say that although many of Leibniz's contemporaries were outraged by claims made by Bouvet and others about the similarity between Chinese beliefs and Christianity, Leibniz took their accounts of Chinese thought as significant evidence of the profound wisdom of the ancient Chinese. For more of the story about the Jesuits and about Leibniz's reactions, see Walker, *The Ancient Theology*, ch. 4; Cook, “Understanding the ‘Other’ Leibniz;” and esp. Cook and Rosemont: *Writings on China*, Introduction. For Leibniz's correspondence on Chinese topics, see Rita Widmaier, *Leibniz Korrespondiert mit China*.

122. Cook and Rosemont, *Writings on China*, 3.

123. For this colorful language, see Scherzer, *Collegii Anti-Sociniani*, Praefatio dz (v). At the same time that Leibniz was committing himself to the wisdom of the ancient Chinese, he was explicitly rejecting the historiography of the ancient theology. See Dutens II 222f: L 592f.

considers the orthodox parts and ignores the remainder. For example, he accepts the wisdom of Aristotle on matters concerning substance, and the truth of the Platonists on matters concerning the relation between God and creatures. As he writes in 1707, “to philosophize correctly, Plato must be combined usefully with Aristotle and Democritus, though a number of the principal doctrines must be stricken from each of them.”¹²⁴ In chapters 2–4, I discuss Leibniz’s Aristotelianism and show that his conception of substance is based on his interpretation of that philosophy. In chapters 5–6, I delineate his Platonism and show that core features of his Metaphysics of Divinity developed out of that tradition. As we will see, Leibniz seems never to have doubted that these two systems contained major portions of the truth.

Leibniz also differed from Thomasius in his attitude toward the new mechanical philosophy. Although Thomasius was prepared to endorse a number of modern ideas, he was not impressed with the physical proposals of the mechanical philosophers.¹²⁵ The young Leibniz was like his mentor in that he intended to construct a true metaphysics that would solve philosophical problems about God, nature, being, and knowledge while remaining consistent with Christian doctrine, the claims of revealed faith, and the phenomena of nature. But Leibniz was unlike his teacher in that he embraced the new explanatory model in physics. Like Weigel and Sturm, Leibniz extended the scope of his eclecticism to the mechanical philosophy and to the new experimental findings.¹²⁶ It is well known that Leibniz himself contributed significantly to seventeenth-century physics. The metaphor of construction is appropriate here in that the metaphysics would mostly be made out of preexisting elements. One of the overlooked aspects of Leib-

124. Dutens II 223; L 593.

125. An important point lurks here about the history of science and philosophy. As recent historians of science are right to point out, the natural philosophers who have become our intellectual heroes and whom we now call ‘modern’ occupied a relatively small area on the seventeenth-century intellectual landscape. Thomasius and many other smart seventeenth-century thinkers rejected the mechanical philosophy and yet endorsed other ‘modern’ thinkers whom they considered innovative. The term ‘modern’ was generally used to set philosophers apart from ancient authors, and there were lots of ways of being modern. Several of the articles in Tom Sorell’s *The Rise of Modern Philosophy* discuss this point. For German philosophers of roughly Thomasius’ generation, the new generation of philosophers seemed both ignorant and vain. As the German philosopher Hermann Conring complained to Leibniz about their contemporaries, the “new philosophers” are “greedy for novelties” and imprisoned by “stupid haughtiness,” while others “embrace old things alone” and “remain uninterested in recent discoveries.” Conring proposes a “middle way” between “the old and the new” (II i 86f). For a provocative argument against the traditional account of early modern science and for citations to other literature, see Steven Shapin’s *The Scientific Revolution*.

126. Throughout his life, Leibniz applauds “the new experiments” of his contemporaries (e.g. II i 68, 73–74, 94, 181; VI iv 2043); moreover it seems clear that he took seriously observations made possible by the microscope and that he molded some of the details of his metaphysics to fit them. On this latter point, see Catherine Wilson, *The Invisible World: Early Modern Philosophy and the Invention of the Microscope*, esp. 191–93, 207–08; and Justin Smith, *Leibniz, Microscopy, and the Metaphysics of Composite Substance*, passim.

niz's brilliance is his success in building such an original and sublime philosophical edifice out of recycled materials.

I suggested earlier that there were two aspects to Leibniz's conciliatory method: his means to the truth and his presentation of it. Before turning to the latter, let's summarize the former.

The *Metaphysics of Method* assumes that the true metaphysics will be constructed from the underlying truths in the great philosophical systems, will be consistent with Christian doctrine and the claims of revelation, and will explain the phenomena (including the new experimental findings).

Concerning the presentation of the truth, Leibniz agreed with Thomasiaus that the goal was to produce intellectual peace. Like his teacher and many other conciliatory eclectics, the young man assumed that the truth would have a harmonizing influence. But Leibniz went far beyond his mentor in his rhetorical subtlety. He was not satisfied to assert a plausible position and then hope for agreement. Nor was he content merely to preach non-sectarianism. Leibniz intended to lead his contemporaries to his philosophical insights by more subtle means. In an important letter to Thomasiaus of 1669, he calls for "a style and method for this new age" and warns against the modern indulgence in intellectual pride.¹²⁷ Throughout his life, Leibniz believed that it was vanity and not truth that motivated those philosophers who proclaimed the correctness of their "new" philosophies. For example, in an essay of 1689, he complains about "the ambition of the new sects [novae sectae]"¹²⁸ and, in the *Specimen of Dynamics* of 1695, he proclaims that we must curb "the passion of the sects, which is stimulated by the vain lust for novelty."¹²⁹ Leibniz intended to control his own passion and pride, and thereby to increase the chances of effecting intellectual peace among his contemporaries.

One of the most striking examples of Leibniz's two-part method occurs in a letter to Hermann Conring (1606-81), who was a well-respected Aristotelian in Helmstedt and who had both warned Leibniz about the dangers of the new philosophy and begged him to reconsider the scholastics. Leibniz's description of the Aristotelian philosophy and his relation to it is noteworthy. Concerning the scholastics, he explains to Conring in March 1678: "I believe many excellent metaphysical demonstrations are to be found in them which deserve to be purged of their barbarisms and confusion. . . . when I began to study philosophy at the universities, I read them, more immoderately and eagerly than my teachers approved. They feared, indeed, that I should cling too tightly to these rocks. . . . And I have never since regretted having sampled these studies."¹³⁰ In fact, Leibniz tells Conring, there is much of value in Aristotle's texts, although a contemporary philosopher cannot endorse the entirety of the ancient system. Leibniz proclaims:

127. II i 17: L 93. 128. VI iv 2044. 129. GM VI 235: L 436.

130. II i 401: L 190. Compare this account of his intellectual development to those passages quoted in sect. 3 and cited in notes 83 and 86.

I have always admired Aristotle's *Organon*, *Rhetoric*, and *Politics*. I understand that his zoology is esteemed by the experts and I think that there are many things which we ought not to spurn in his eight books on physics, as well as in his books on the soul and on metaphysics. But I cannot value his works on the heavens and on generation and corruption highly, and I do not believe that you disagree.¹³¹

Having carefully delineated his relation to the Aristotelian philosophy and proven himself to be properly educated, Leibniz goes on to defend the mechanical philosophers against Conring's attacks. His strategy is fascinating. Not only does he note the advances that the new physics has made, he also claims that the modern authors are themselves properly rooted in ancient thought:

You need not wonder that Descartes should have so many disciples all at once. For except for Galileo, you will find no one in our century who can be compared with him, whether in genius for discovering the causes of things, in judgment in explaining the senses of the mind lucidly. . . . To these things was added the fame of his profound mathematical knowledge. . . . For the rest, neither Galileo, Descartes, nor Gassendi was ignorant of Aristotle's doctrines. Gassendi had certainly read the ancients more carefully than did many Aristotelians.¹³²

In fact, according to Leibniz, one of the reasons that so many of their contemporaries have been "disgusted with the scholastic program of studies" is that "the so-called Aristotelians" have been so "ignorant of Aristotle's teachings." About Descartes in particular, Leibniz explains: "It is certain, however, that most of his metaphysics is already found, partly in Plato and Aristotle and partly in the scholastics."¹³³

After so describing the mechanical philosophers, Leibniz goes on to defend his version of their philosophy against Conring's criticisms. First, he wonders: "Who would deny substantial forms, that is, essential differences between bodies?" However, "[t]hat the whole of the new philosophy is soon to be rejected by a learned posterity, as you say, is very unlikely."¹³⁴ Leibniz's argument for the mechanical philosophy reveals a great deal about his rhetorical subtlety and conciliatory position. He insists:

everything happens mechanically in nature, that is, according to certain Mathematical laws, prescribed by God. I recognize nothing in the world but bodies and minds, nor anything in bodies insofar as they are separated from mind but magnitude, figure, situations, and changes in these. Suppose that some angel wishes to explain the nature of color to me distinctly. He will accomplish nothing by chattering about forms and faculties. But if he shows that a certain rectilinear pressure is exerted at every sensible point and is propagated in a circuit . . . , and then teaches me exactly the cause and the mode of this pressure, and deduces the laws of reflection and refraction from it, thus explaining everything in such a way that it is clear that it could not even happen otherwise, then at last he will have increased my knowledge, since he has treated physics mathematically. . . . I should like you to think of this one thing: that unless physical things can be explained by mechanical laws, God cannot, even

131. II i 400: L 188–89. 132. II i 399–400: L 188. 133. II i 401: L 190.

134. II i 400: L 189.

if he chooses, reveal and explain nature to us. For what would he say, I ask you, about vision and light.

Leibniz goes on to note that even if we were to present a scholastic-style explanation of light in terms of potentiality, it would not “make us any wiser.”¹³⁵

Thus, in his letter to Conring, Leibniz presents a powerful argument for his conciliatory eclecticism: in order to arrive at the truths about nature and God, we must combine the best of the modern physics with the best of the ancient metaphysics. But he also offers a wonderful example of his rhetorical strategy: he praises both extremes of the philosophical options (here, the scholastics and the moderns), points to problems with each, and drops clues about his conciliatory position. In an unusually frank moment, Leibniz explains to Conring:

I am concerned, as are all who wish to hold a middle ground, not to seem too much inclined toward either of the two opposed adversaries. Whenever I discuss matters with the Cartesians, certainly, I extol Aristotle where he deserves it and undertake a defense of the ancient philosophy, because I see that many Cartesians read their one master only, . . . and thus unwisely impose limits on their own ability. . . . I think that the two philosophies should be combined and that where the old leaves off, the new should begin.¹³⁶

That Leibniz was more sophisticated in his rhetorical strategy than Thomasius and many of his conciliatory contemporaries is clear. In order to grasp the full significance of many of Leibniz’s writings, it is important to recognize that he intended to nudge and not push people in the direction of the truth. Some of his most fundamental assumptions have not been recognized because he consciously hid them beneath the surface of the text. To be precise, I propose that at least some of the obscurity of Leibniz’s texts is due to the fact that he practised a kind of philosophical therapy whose goal was to disengage the members of a philosophical sect from blind commitment to their school and to call their attention to the interconnections between their own true beliefs and those of other sects. In an essay of 1669–70 he writes: “The power of persuasion consists sometimes in exhibiting reasons, sometimes in moving the affections; but at the heart of all these [means of persuasion] is of course the art of obtaining attention.”¹³⁷ Along similar lines, he explains in 1668–69 that one of his theological demonstrations “has a three-fold use – to confirm those who think rightly, to attract the rest, and to prove philosophy to be a useful and necessary beginning for theology.”¹³⁸ The success of the true conciliatory philosophy to promote the desired peace would depend entirely on its ability to *attract* wayward students in a way that would lead them to see the interconnections among the doctrines of their school and those of others. As Leibniz puts it to Conring, he extols the philosophical virtues of Aristotle to the Cartesians

135. II i 400–01: L 189. 136. II i 402: L 190. 137. VI ii 276: L 113.
138. VI i 514: L 118.

so as to release them from the limitations of their teacher which they “unwisely impose” on themselves.¹³⁹ Or, as he writes in a letter to Duke Johann Friedrich in the autumn of 1679:

There are many sides to everything, and the way it [a philosophical proposal] is first seen determines much. The most harmless proposals have often been rejected on false suspicions, and the most scabby ones accepted through the ability of their supporters. People often do not take pains to examine matters thoroughly, and however acceptable views may be, they are sometimes rejected at once on a false presupposition.¹⁴⁰

In the chapters that follow, there will be ample proof of Leibniz’s attempt to attract a philosopher of one school to the ideas of another. His hope was that once the wayward thinker was so engaged, careful reflection would produce deep analysis and right thinking. In a passage of 1676, part of which we have seen, Leibniz explains that once a certain part of “a metaphysics . . . has been approved then, if people examine it more deeply later, they themselves will draw the necessary consequences.”¹⁴¹

According to Leibniz, the successful presentation of the truth must have the right mixture of philosophical insight and rhetoric. In proposing a conciliatory position to an Aristotelian, the conciliator would use Aristotelian terminology, ask the interlocutor to consider the underlying similarity between the proposed view and that of the ancient, and then suggest a relation between the proposal and the view of a very different author, say, Descartes. The clever conciliator will be able to engage any sectarian in a similar fashion. If the members of different schools are made to see a plausible and interesting connection between their views, then they will be set to thinking about the new proposal. By such means, some small peace will be forged between the warring camps; at the very least, the intellectual distance between them, and their mutual mistrust will have been diminished. The desired peace could not be forged if too many of the fundamental assumptions are too obvious. They have to be obscure enough so that the reader will discover them only after the right amount of deep thinking. As the careful student of Leibniz’s philosophy well knows, his most basic assumptions are often unavailable in his texts. One has to discover them beneath the surface and piece them together from scattered suggestions. Russell famously argued that Leibniz’s tendency to hide his real philosophy and to change his terminology was due to his desire for “cheap popularity.”¹⁴² One of the happy consequences of my interpretation is that it renders such behavior the second part of Leibniz’s conciliatory method. His lack of intellectual forthrightness was due to virtue rather than vanity. Leibniz’s rhetorical strategy was nothing less than the means to save our souls.

We are now prepared to summarize the second part of Leibniz’s conciliatory method:

139. II i 402: L 190. 140. II i 491: L 262. 141. VI iii 573f: Pk 95.

142. Russell, *A Critical Exposition*, vi; cf. Rescher, *The Philosophy of Leibniz*, 160; and L 4–13.

The *Rhetoric of Attraction* attempts to engage the sectarian reader by using agreeable philosophical terminology and by extolling the virtues of the reader's sect while attracting attention to the virtues of other philosophical schools; ultimately the goal is to entice the reader to consider the underlying (and usually unstated) assumptions, which Leibniz considers to be true and which he thinks will eventually lead the reader to philosophical enlightenment and intellectual peace.

I said in the Introduction that many twentieth-century commentators have focused on Leibniz's rationalist and deductive tendencies and, as a consequence, have been inclined to search for the logical interconnections among his first truths.¹⁴³ I also noted that the same commentators have been frustrated in their attempts to find a neat deductive system. Many recent scholars have given up hope of finding such a system, and some have glimpsed the elaborate interconnected web of Leibniz's beliefs. As Garber nicely makes the point, "Leibniz's philosophy doesn't derive from his logic because it doesn't *derive*, strictly speaking, from any one source at all. Leibniz's philosophy is not, I think, a linear argument, with a beginning, middle, and end, but a complex of interrelated and mutually reflecting positions, principles, and arguments."¹⁴⁴ Leibniz's conciliatory strategy helps to explain why the search for a deductive system was doomed to failure and why, among other things, we find so many different versions of his philosophical views. Like his teachers, Leibniz was concerned with clarity of definitions. He emphasizes the fact that in his attempt to define words clearly and argue carefully, he stands in a long line of ancient and modern thinkers.¹⁴⁵ But also like his teachers, he was *not* a rationalist who believed that one arrives at fundamental truths through armchair intuition and then deduces from them other truths. Rather, for Leibniz and his predecessors, the truths are borrowed from the great philosophical systems.

The notes that Leibniz took on the elements of natural law in 1670–71 afford a nice example of his eclectic tendencies. While the texts are replete with definitions and demonstrations, many of the most important of these are themselves the result of more fundamental conciliatory work. For example, he brings to this ethical context the notion of endeavor (*conatus*) which he had just developed in his physical work and which he here uses to forge a compromise between ancient and modern ethical theories. Part of the motivation behind many of the definitions listed in this ethical study is

143. For recent examples of this approach to Leibniz's thought, see Klaus E. Kaehler, *Leibniz's Position der Rationalität* and Annette Marschlich, *Die Substanz als Hypothese, Leibniz' Metaphysik des Wissens*.

144. Garber, "The Middle Years," 73. Cf. François Duchesneau, *Leibniz et la méthode de la science*, passim. Donald Rutherford recognizes that Leibniz is concerned with reconciliation in his public writings, but nevertheless claims that "[p]rivately," Leibniz "remained committed to the idea that philosophy could, and should, take the form of demonstrations from a small number of definitions and axioms." See Rutherford, "Demonstration and Reconciliation: The Eclipse of the Geometrical Method in Leibniz's Philosophy," 183; and *Rational Order*, ch. 4.

145. His examples of the former include Plato, Aristotle, and Euclid, while an example of the latter is Hobbes. See, e.g., II i 200.

an attempt to produce a reconciliation between ancient and modern notions and to give an adequate account of the love of God. Also, we find in these texts something typical of Leibniz: the order of the premises in his demonstrations differs depending on the precise point he wants to emphasize.

In conclusion, there are five points to emphasize about Leibniz's approach to the construction of the true philosophy. First, like Pico della Mirandola, Thomasius, Scherzer, and Weigel, Leibniz thought that the fundamental truths were (mostly) those offered by the illustrious ancient thinkers and that one came to intuit these insights through a careful analysis of the grand metaphysical systems. In other words, the road to knowledge was paved with texts by the great thinkers. Second, like Sturm, Leibniz believed that the conciliatory eclectic constructs the true philosophy out of all the best old and new philosophies and that the result is a collection of true assumptions. I will argue in the following chapters that some of Leibniz's most basic metaphysical beliefs were taken directly from the Aristotelian, Platonist, and mechanical philosophies. Third, it will become obvious that none of Leibniz's basic doctrines is more fundamental than the others. Rather, they are all part of a coherent web of beliefs that support one another and that together solve the great philosophical and theological problems. That a substance is something wholly self-sufficient, that each creature is an emanation of God's essence, and that all corporeal features are to be explained mechanically are such truths. Leibniz's system is the result of the clever conciliation of these sorts of assumptions. Instead of a set of doctrines that were deduced from first principles, his philosophy is a brilliant blending of ancient and modern views. Fourth, it is important to emphasize Leibniz's commitment to Christian orthodoxy. In the chapters that follow, there will be abundant evidence that he molded his ideas to conform to traditional Christian doctrine.

Finally, we must acknowledge the role that Leibniz played as the architect of his system. While he proudly proclaims throughout his life that his philosophical ingredients were taken from other thinkers, he is equally insistent about his own contribution. For Leibniz, his philosophy was true because *he* had been able to fathom the truths within the other great systems and to combine them in the appropriate way. As we will see, Leibniz borrowed heavily from other philosophers, but he always made the ideas his own. And he was surely cognizant of his own role as system-builder. In his *New essays on human understanding*, written in 1703–05, Leibniz offers a summary of the true philosophy and the method that produced it. He writes:

This system appears to unite Plato with Democritus, Aristotle with Descartes, the scholastics with the moderns, Theology and morality with reason. Apparently it takes the best from all systems and then advances further than anyone has yet done. . . . I now see what Plato had in mind when he talked about matter as an imperfect and transitory being; what Aristotle meant by his 'Entelechy'; how far the skeptics were right in decrying the senses. . . . How to make sense of those who put life and perception into everything. . . . I see everything to be regular and rich be-

yond what anyone has previously conceived. . . . Well, sir, you will be surprised at all I have to tell you, especially when you grasp how much it elevates our knowledge of the greatness and perfection of God.¹⁴⁶

And in the same letter to Nicolas Remond with which I began section 1 of this chapter, Leibniz writes:

I have tried to uncover and unite the truth buried and scattered under the opinions of all the different Philosophical Sects, and I believe that I have added something of my own which takes a few steps forward. . . . I flatter myself to have penetrated into the Harmony of these different realms.¹⁴⁷

When Leibniz emerged from the Rosental woods in 1661, he was on a path that would lead to this harmony. Now that we have articulated his conciliatory method, it is time to trace that philosophical journey.

146. VI vi 71–73: *New Essays On Human Understanding*, trs. Peter Remnant and Jonathan Bennett, 71–73.

147. G III 606–07: L 654–55.

Part two

Metaphysics of Substance

Aristotelian assumptions, 1668–69

In 1545, Catholic dignitaries from all over Europe convened in the imperial city of Trent to discuss the doctrinal and political problems produced by Luther and his reformation followers. It would take the Council three sessions and nearly twenty years to reach its conclusions. In the Papal bull announcing the Council, Pope Paul III asserted that two of its goals were to heal the schism perpetrated by the Protestant rebels and to reform the church. As much as its participants may have intended conciliation, their conclusions contradicted the Protestants on several crucial points and thereby guaranteed continued religious strife. Despite the failure in its task of reconciliation, however, the Council did succeed in asserting policy that would influence Christian Europe for centuries.¹

In 1668, Leibniz attempted to succeed where the sixteenth-century bishops and cardinals had failed. Under the encouragement of his friend and patron, Baron Johann Christian von Boineburg, Leibniz commenced work on an ambitious theological project entitled *Catholic demonstrations*. One of the explicit motivations behind the project was to effect a reconciliation between Roman Catholics and Lutherans. Leibniz hoped specifically to solve certain theological problems in a way that would satisfy members of both faiths and that would remain consistent with the doctrinal pronouncements of the Council of Trent.² As I have argued, Leibniz intended to construct a true metaphysics that would answer the grand philosophical questions while remaining consistent with Christian doctrine. Some of the first purely philosophical problems faced by Leibniz were those related to theological topics: each of the essays completed for his *Catholic demonstrations* attempts to give a coherent account of a traditional Christian theological doctrine (e.g., transubstantiation, incarnation). I will show in this chapter that the foundation of Leibniz's Metaphysics of Substance was laid in his attempt to solve the metaphysical problems posed by such theological doctrines. Although the details of Leibniz's system continued to evolve over the next few years, the metaphysical assumptions that emerge in these theological essays of 1668–69 form the foundation of his thought for years to come. The philosophy of the *First truths* is based on this foundation.

1. For a summary of the history, goals, and controversies of the Council, see the *Encyclopedic Dictionary of Religion*, eds. Paul Meagher, Thomas O'Brien, and Consuelo Aherne, vol. 3, 3563–65.
2. II i 487–491: L 259–262.

That Leibniz has a metaphysics at this time will come as a surprise to many. It has not been previously recognized and is discernible only if one approaches the early works with a sufficiently broad textual and historical perspective.³ In this chapter, I delineate the combined methodological and theological goals of Leibniz's project, present a systematic account of the relevant theological essays, and summarize the Aristotelian assumptions that I attribute to Leibniz and whose implications I briefly discuss. These assumptions constitute the basis for Leibniz's *Metaphysics of Substance*.

1. Metaphysical and religious harmony

However odd it may seem to twenty-first-century philosophers that Leibniz's first attempt at systematic metaphysics was directed toward an ecumenical goal, such a project was not at all unusual in the mid-seventeenth century. Whether motivated by political, millenarian, or other religious concerns, the period is full of intellectuals in search of peace among the faithful. I argued in the last chapter that many of Leibniz's contemporaries had accepted a method of conciliatory eclecticism. With this historical context firmly in place, we are more readily able to discern the role that such theological matters played in the development of Leibniz's philosophy.

In an essay written a few years after the *Catholic demonstrations*, Leibniz summarizes the close relationship between his metaphysical and theological goals. In this essay of 1673–75, entitled *On the true method in philosophy and theology*, he outlines his intellectual history and explains his interest in theological matters. He “congratulates” himself for his “youthful days” when he learned the scholastic philosophy, and bemoans the fact that many young philosophers do not do the same. Because of the obscurity of many scholastic texts, his contemporaries are often prepared to reject “the entirety” of that useful philosophy. Echoing the words of Thomasius, Scherzer, and Weigel, Leibniz declares: “the Scholastics labored under only one vice, that is, with all the order they sufficiently showed for the most part, . . . they left the use of their words in uncertainty. Whence instead of one definition arose many.” According to Leibniz, “their often admirable reflections could easily be purged or clarified by a mathematically schooled mind.” Having sampled the difficulties of certain aspects of scholastic metaphysics and the pleasures of the new mathematical sciences, he has been concerned to apply the new mathematical method to the topics of scholastic theology. As he explains it, Leibniz intended to find a middle ground between those new philosophers who would reject “the whole of

3. None of the studies of Leibniz's early thought either identify his original conception of substance or recognize the full importance of the theological issues that influenced its development. For references to this literature, see the notes in ch. 1, sect. 1. Daniel Fouke is one of the few scholars who has noted the importance of theological doctrines like that of the Eucharist for early Leibniz. See his “Metaphysics and the Eucharist in the Early Leibniz.”

scholastic doctrine” and those scholastics whose “admirable reflections” are in need of clarification.⁴ Concerning his earlier work he writes:

I saw how the most distinguished men, Saint Thomas and Saint Bonaventura and William Durand and Gregory of Rimini and many other authors of former times, have offered not a few theorems of marvelous subtlety to first philosophy which might have been demonstrated with the utmost rigor. I recognized how Natural Theology, which had been most gloriously created by these men, had been submerged in a barbaric darkness, and through a confused use of words floundered between doubtful distinctions, and so I often played the mathematician in theology . . . ; I set up definitions and tried to deduce from them certain Elements which were not inferior to those of Euclid in clarity but far exceeded them in the magnitude of their consequences.⁵

According to Leibniz, his methodological strategy in his theological writings was to combine the rigor of the new philosophy with the subtlety of the scholastic approach in an attempt to solve the most difficult problems in theology. The result of this strategy, he goes on to claim, was to give an accurate account of substance that would avoid both the mistakes of the scholastics and those of moderns like Descartes. By such means, we will both “explain the phenomena” and “illuminate Natural Theology and the mysteries of faith” – that is, “once the true and inevitable concept of substance is understood,” even the most obscure theological difficulties (e.g., that of transubstantiation) will be rendered perspicuous. The theorems that he offers are “of great significance . . . for the firm foundation of religious faith and for peace among the Churches.”⁶

Leibniz could not be clearer about either his philosophical ends or his methodological means. His fundamental goal was to solve the most recalcitrant theological problems. He has been “delighted by the thoroughly luminous teachings” of the “mathematical sciences.” However, unlike most of his sectarian contemporaries who had been similarly attracted by modern methodology, he never lost sight of “the diviner science” practiced by the scholastics.⁷ Because he was accomplished in both philosophical traditions, he was prepared to combine the best in each so as to resolve the theological disputes. As he writes, the “edifice of truth will be erected” only when the materials of “many centuries” are collected.⁸

4. VI iii 156: W 60.

5. VI iii 155: W 59. This passage bears witness to two points made in chapter 1: first, when Leibniz exited the Rosental wood, he had not abandoned the whole of the scholastic philosophy; second, when Leibniz writes later in life about his early intellectual development, he is often oversimplifying in a way that suits his mood and/or audience. The text quoted here highlights a very different strand in his development than does the passage quoted at the outset of ch. 1, sect. 1. Also, compare it to the passage cited in ch. 1, n. 86. A happy consequence of my interpretation is that it is consistent with Leibniz’s various autobiographical comments despite the fact that, for example, one emphasizes his interest in the mechanical philosophy and another his interest in scholasticism.

6. VI iii 159: W 65. 7. VI iii 155: W 58f. 8. VI iii 156: W 61.

There is another important text in which Leibniz summarizes the inter-relationship between his metaphysical and his theological concerns. He writes to Duke Johann Friedrich in a letter of 1679:⁹

I frequently examined in a fundamental way the controversies of theology with the late Baron Boineburg where it was found finally that the Council of Trent can be accepted in its entirety without difficulty, except for three or four passages that, it seems to me, in order to avoid opinions involving a contradiction, must necessarily be given an interpretation that is not contrary to the words, nor to the doctrines of the Catholic church, I believe, but that is rather far removed from the common opinions of certain Scholastic theologians and, especially, the monks. To speak candidly and without reservation . . . , these interpretations, which seemed to me the true ones, are at least tolerable [to the Catholics] and contain nothing heretical or contrary to faith.¹⁰

Leibniz goes on to explain that Boineburg was “delighted” with this project. It was Leibniz’s hope to put his interpretations of these theological matters “in such a clear light that perhaps [his] work could contribute something in time to reunion.” The theological project was to have three parts. Leibniz continues:

The *first* was to deal with the demonstrations of the existence of God, of the immortality of the soul, and of all natural theology; for I did in fact have some surprising ones. The *second part* was to be about the Christian religion, or revealed theology, where I sought to demonstrate the possibility of our mysteries and to meet all the objections of those who claim to show the absurdity and the contradictions in the Trinity, the Incarnation, the Eucharist, and the resurrection of the body. . . . We must reply to objections in order to satisfy ourselves entirely, since a single impossibility proved of our mysteries would destroy the whole structure. The *third part* was to treat of the church; here I have convincing proofs that the church hierarchy is of divine right.¹¹

Beginning with the essays of 1668, many of Leibniz’s most important papers concern the topics listed here. As we will see, in the *Catholic demonstrations* he is concerned to show that the mysteries of the faith are consistent with the dominant philosophies of his time. In other words, one of Leibniz’s primary philosophical interests in 1668 was to develop a coherent metaphysics that would solve this diverse group of theological problems. However, as Leibniz explains to the Duke, such a metaphysics would accomplish a good deal more than that. He writes:

in order to lay the basis for these demonstrations, I plan to preface them with the demonstrated elements of the true philosophy to aid the understanding of the principle work. . . . It is also necessary to push metaphysics further than has been done

9. Some of the most important explications of Leibniz’s early views are found in his letters to Johann Friedrich. Perhaps because of the obscurity of these writings, few scholars have attended to them. I use these letters at crucial points in the argument for my interpretation. See esp. chs. 4, 7, and 8.

10. II i 488: L 259. 11. II i 488: L 260.

so far, in order to have true notions of God and of the soul, of a person, substance, and accidents. And, unless we have a more profound insight into physics, we cannot answer the objections that are formed against the story of creation, the deluge, and the resurrection of the body. Finally, true morality must be demonstrated in order to learn what justice is, as well as justification, freedom, pleasure, happiness, and the beatific vision. . . . It seems to me . . . that nothing is more useful for the general good than the authority of a universal church which forms a body of all Christians, united by bonds of charity, and which can hold in sacred respect the greatest powers on earth. Every good person should therefore desire that the luster of the church everywhere be restored and that the spiritual power of its true ministers over the faithful may be more fully recognized than is often done, even among those who pass as the most Catholic.¹²

Leibniz is wonderfully explicit here about his grand philosophical concerns. As we noted in chapter 1, his *Metaphysics of Method* was supposed to solve all the significant philosophical problems and remain consistent with both Christian doctrine and the phenomena of nature. It was during 1668 that he began the construction of that metaphysics, which depends crucially on his rehabilitation of the scholastic notion of substantial forms. Leibniz continues in his letter to the Duke:

There is another important thing in my philosophy which will give it access to the Jesuits and other theologians. This is my restoration of substantial forms, which the atomists and Cartesians claim to have exterminated. It is certain that, without these forms and the distinction that exists between them and real accidents, it is impossible to explain our mysteries. For if the nature of body consists in extension, as Descartes claims, it involves a contradiction, beyond all doubt, to maintain that a body may exist in many places at once.¹³

Leibniz develops his first conception of substance in the years 1668 and 1669. During this period, he rejects the metaphysical foundations of mechanism, most particularly the conception of body as extension (*res extensa*), and attempts to replace that foundation with his own, Aristotelian conception of substance. The result is a conception of substance that constitutes a reconciliation of Aristotelian and mechanical notions, that depends crucially on his (reformed) notion of substantial form, and that proposes solutions to all the relevant theological problems. It is now time to explicate the metaphysical assumptions that Leibniz first formulates in 1668–69 and that form the foundations of his *Metaphysics of Substance*. It is important to grasp the central role that the notion of substantial form has in Leibniz's theological essays. According to Robinet and many subsequent scholars, the birth of Leibniz's metaphysics is marked by the "restoration of substantial forms," which they date at 1679 or later.¹⁴ In fact, as we will see, this restoration begins in 1668.

12. II i 489; L 26of. 13. II i 490; L 261.

14. See Robinet, *Architectonique disjonctive*; and more recently, Paul Lodge, "When Did Leibniz Adopt the Pre-established Harmony?"

2. The theological writings and Leibniz's Metaphysics of Substance

In February 1667, the twenty-year-old Leibniz received his doctor's degree in law at the University of Altdorf. He then went to Mainz, where his reputation as a brilliant young law student preceded him. Soon after his arrival there, he was appointed judge in the High Court of Appeal. He also acted as lawyer and adviser to a distinguished German statesman, Baron Johann Christian von Boineburg, who had become both a friend and patron of the young man. During the next six years, Leibniz was involved in a variety of official duties, including various diplomatic chores and the rather large task of improving the Roman civil code. He maintained his philosophical interests and in 1668, under the encouragement of Boineburg, he began work on the *Catholic demonstrations*. The project, as Leibniz conceived it in 1668, was to consist of a series of philosophical prolegomena and four parts.¹⁵ The prolegomena were to contain the "elements of philosophy" – that is, the "first principles" of metaphysics, logic, mathematics, physics, and practical philosophy, while the four parts were to be demonstrations of the existence of God, the immortality of the soul, the Christian mysteries (e.g., transubstantiation), and the authority of the church and scripture. Although Leibniz continued to work on the project during and after his stay in Paris, he composed most of it in the years 1668–69.

Before turning to the theological essays, it is important to be clear about Leibniz's philosophical commitments when he began the *Catholic demonstrations* in 1668. As the essays themselves will make evident, he is both an Aristotelian and a mechanist. Concerning the former, he had learned his lessons well from the "most profound" Thomasius and from his own study of the ancient texts. He often shows an intelligent understanding of the ancient thought, although he sometimes goes beyond anything that Aristotle actually accepted. But we must not let Leibniz's slight misinterpretations hinder our pursuit of what *he* considered his Aristotelianism. In other words, the accuracy of his interpretation of Aristotle's philosophy is less important than the fact that, when it came to matters concerning substance and the metaphysical work that created substances are supposed to do, Leibniz took himself to be a full-fledged follower of Aristotle.

Why did the Aristotelian conception of substance appeal to Leibniz so completely? Some educated guesses are in order. First and foremost, following the revered Thomasius, Leibniz took nature to be an elaborately arranged causal nexus that was harmoniously moving toward the good. At the heart of the Aristotelianism that Thomasius bequeathed to his student (and that I discuss briefly in chapter 3) stands the idea that nature is constituted of individual corporeal substances whose substantial forms act so

15. The outline of the project that Leibniz drew up in 1668–69 is different from that presented to Johann Friedrich in 1679. Compare VI i 494–500 with II i 487–91: L 259–62. I rely on the former here, but quoted the latter in section 1.

as to contribute to a divinely arranged harmony. At the very beginning of his long philosophical career, Leibniz embraced the two-part assumption that everything in the world acts to instantiate the good, and in so doing plays a role in a divinely arranged harmonious plan. For Leibniz, an Aristotelian account of substance formed a secure foundation for such a world. But Leibniz also recognized very early that the Aristotelian theory of substance could easily accommodate the new mechanical physics and thereby explain the phenomena. Although this was a common assumption among Leibniz's contemporaries, he differed from the others in the brilliance of the synthesis that he forged. Moreover, from the perspective of war-ravaged Germany, Aristotelianism also must have seemed the safest bet as a philosophy of religious reconciliation. As will become plain, the doctrinal declarations of his contemporary Catholics were framed in Aristotelian terms. In other words, in the 1660s, Leibniz appears to have had excellent metaphysical, physical, and theological reasons to accept a major part of the Aristotelian philosophy.

Concerning his mechanist leanings, Leibniz's conception of body is thoroughly based in the new mechanical physics. As I argued in chapter 1 (section 1), when Leibniz surveyed the physical proposals of philosophers like Hobbes, Gassendi, and Descartes in the 1660s, one of his primary goals was to discover the common denominator among the mechanical options. By 1668, he has attained that goal so that, in the theological essays of 1668–69, he can offer a summary of the mechanical physics. While his account unsurprisingly ignores the differences among the individual mechanists, it successfully identifies the core of the mechanical philosophy.¹⁶ For Leibniz, the mechanical position reduces to the following: there is some sort of matter or extended stuff (*res extensa*) that is (somehow) moved and whose arrangements both cause and explain the corporeal features of individual bodies; therefore, a body is organized *res extensa* and all corporeal features¹⁷

16. Although I use the designation 'mechanical philosophy,' the young Leibniz did not. As Daniel Garber has pointed out to me, it was Robert Boyle who, in *The Origin of Forms and Qualities according to the Corpuscular Philosophy* of 1666, offered a kind of manifesto for the mechanist program. According to Boyle, the corpuscular and mechanical philosophies amount to the same thing and, at the core of each, are two claims, namely, that (1) there is a "universal matter common to all bodies" and (2) the diversity that exists among bodies "must necessarily arise from somewhat else than the matter they consist of." That is, "to discriminate the catholick matter into variety of natural bodies, it must have motion in some or all its designable parts." This is precisely the opinion of the young Leibniz. For Boyle's account, see *The Works of the Honourable Robert Boyle*, vol. 3, 13–16 and *Selected Philosophical Papers*, 18–19; in the latter collection, also see *About the Excellency and Grounds of the Mechanical Hypothesis* (of 1674), 139. Although Leibniz refers to Boyle several times during the 1660s, he does not refer to *The Origin of Forms and Qualities*. For a recent succinct account of the mechanical philosophy, see Steven Nadler, "Doctrines of Explanation in Late Scholasticism and in the Mechanical Philosophy," esp. 518–31.
17. For the sake of simplicity and clarity, I will use the neutral term 'feature' when talking about the qualities, accidents, affections, or properties of corporeal things. There are two good reasons for doing this: Leibniz himself does not use consistent terminology and moreover the various Latin terms which he does use (e.g., *qualitas*, *affectio*, *accidens*) bring

are reducible to the arrangements of such extended stuff. Although Leibniz's understanding in 1668–69 of the views of some of the prominent mechanists is incorrect in some details, such inaccuracies should not detract from the fact that he is utterly committed to mechanical physics. The theological writings indicate exactly how his reconciliation of the Aristotelian and mechanical philosophies evolved in the face of the noted theological problems. I would now like to analyze the most important of these theological works in their probable chronological order.

Confession of nature against the atheists

Leibniz did not write the *Confession of nature against the atheists* in the best of circumstances. As he explains to Thomasius, he composed it during a journey “in the confusion of an inn.”¹⁸ But he was happy enough with the work to send it to Boineburg for his consideration. Nor does the occasional imprecision of the piece detract from its importance: it reveals Leibniz's original thinking about mind, body, explanation, and cause. The work has two parts: a rather long argument for the existence of God and a short proof of the immortality of the soul. The first, entitled “That a *Ratio* of Corporeal Phenomena Cannot be Presented without an Incorporeal Principle, i.e., God,”¹⁹ is especially significant for what it reveals about Leibniz's version of mechanism and his original metaphysical assumptions.

Leibniz begins his essay with an account of how the mechanical philosophy has led philosophers to atheism. According to Leibniz, while the *rationes* of the ancients had referred either “to the Creator alone or to some kind of incorporeal forms,” the mechanists had discovered that “the *rationes* of most things can be given in terms of the figure and motion of bodies, as it were mechanically.” Leibniz explains that before adequately considering the foundations and principles of their mechanism, these philosophers proclaimed that natural reason offered no evidence of anything incorporeal (either of God or the soul), so that one had to find evidence for the incorporeal elsewhere. The result, he continues, is that the evidence for the incorporeal (for example, that supplied by the scriptures) is itself questioned and atheism prevails. Leibniz maintains that his present investigation began because of his own dissatisfaction with these conclusions. He became “im-

with them complicating scholastic implications. Therefore, except when quoting directly or discussing the details of a quoted passage, I use the term ‘feature’ when discussing what we would loosely call the ‘properties’ of corporeal objects.

18. II i 24: L 102. I capitalize only the first word in the titles of unpublished texts. See xiii. As Leibniz explains here, the piece was published though not under his supervision and in a mangled form.
19. “Quod ratio phaenomenorum Corporalium reddi non possit, sine incorporeo Principio, id est Deo.” The Latin term, ‘ratio’ (plural: ‘rationes’) is ambiguous in a number of ways. In order to bring attention to this fact and to remain uncommitted as to how it is to be interpreted, I have chosen not to translate the term when it is used in its causal or explanatory sense. The reasons for this will become clear in what follows.

patient at being dispossessed” of an “eternity after death and the hope that divine benevolence would sometime be made manifest toward the good and the innocent.”²⁰

If Leibniz’s motivation is theological, his method is “scientific.” He writes: “Setting aside all prejudices, therefore, and suspending the credit of scripture and history, I set my mind to the anatomy of bodies, to see whether it is possible to give the *ratio* of sensory appearances without supposing an incorporeal cause.”²¹ Leibniz intends to dissect the “anatomy of bodies” so as to decide whether or not corporeal features can be explained without recourse to God. According to Leibniz, he is in full agreement with philosophers such as Galileo, Bacon, Gassendi, Descartes, Hobbes, and Digby on two basic points: first, that in “giving the *ratio* of corporeal phenomena, one must not unnecessarily resort to God or any other incorporeal thing, form, or quality;”²² and second, that as far as can be done, “everything should be derived [deducere] from the nature of body and its primary qualities – magnitude, figure, and motion.” But, Leibniz asks: “what if I should demonstrate that the origin of these very primary qualities themselves cannot be found in the nature of body? Then, indeed, I hope that these naturalists will admit that body is not self-sufficient [sibi non sufficere] and cannot subsist without an incorporeal principle.”²³ From this and related comments, it is clear that Leibniz is wholly committed to the mechanical principles that bodies are constituted of some sort of extended stuff (*res extensa*) and that corporeal features ought to be explained in terms of the primary features of such bodies, that is, in terms of their magnitude, figure, and motion.²⁴ Where he thinks he differs from the mechanists is in his denial that the primary features themselves have their origin in the nature of body and in the conclusion which he draws from this, namely, that we must admit an incorporeal principle in order to explain them.

In the rest of Part I of the *Confession of nature against the atheists*, Leibniz presents arguments to show that none of the primary features has its origin in the nature of body. Before explicating these arguments, I would like to make some preliminary comments. First, Leibniz is hopelessly confused about what the mechanists’ position actually is. While they do think that all corporeal features are explicable in terms of the fundamental features of body (they differ about what these are) without recourse to anything incor-

20. VI i 489: L 110.

21. The Latin of the latter clause is: “an eorum quae in corporibus sensu apparent, rationem reddere possibile sit, sine suppositione causae incorporalis.” VI i 489: L 110.

22. VI i 489–90: L 110. Although the language here and in the long quotation immediately preceding suggests that Leibniz is primarily interested in sensory phenomena, he is not. As the remainder of the essay makes clear, his main concern is with the explanatory source of the primary features of bodies.

23. VI i 490: L 110.

24. In fact, the proposals of the mechanical philosophers differ greatly and it is difficult to summarize accurately their basic assumptions. Leibniz’s discussion here is based on an oversimplification of their views, but it is one that I will follow in presenting his argument.

poreal, they do not believe that the fundamental features are themselves wholly derivable from the nature of body (*res extensa*) taken by itself. Gassendi and Descartes, for example, assume that God is required to account for the motion of body, and in this sense they deny that motion comes from the nature of body itself. Descartes maintains that God “preserves motion in matter,” while Gassendi thinks that God infuses motion into atoms at their creation.²⁵ Descartes and Gassendi are perfectly happy to let God be the cause of the motion of bodies and see no problem in the fact that the full account of motion does not rest in the nature of body.

Leibniz’s mistaken interpretation of the mechanists seems to rest on two closely related assumptions. Because the mechanists designate magnitude, figure, and motion as the fundamental features of body and because they take body to be some kind of extended stuff, Leibniz assumes that they must also believe that the cause and explanation of these fundamental features lie in the nature of body. He finds it unfathomable that someone would assign to an object features that themselves do not follow from the nature of the object. According to Leibniz, if the “origin of these very primary qualities themselves cannot be found in the nature of body,” then “body is not self-sufficient.”²⁶ The intuition here, what I will call the *Principle of Self-Sufficiency*, may be put as follows: a being S is self-sufficient if and only if the full account of its features – that is, the cause and explanation of its features – can be discovered in the nature of S.²⁷

Nor does Leibniz stop here. He goes on to make an even stronger claim, namely, that “if these [primary] qualities cannot be derived from the definition of body, they obviously cannot exist in bodies left to themselves [in corporibus sibi relictis existere non posse].”²⁸ As he puts it later in the *Confession of nature*, left to their own natures, “bodies cannot *have* [habere non posse] a definite figure, quantity or motion.”²⁹ Here the claim, which I will call the *Principle of Causal Self-Sufficiency*, seems to be that a being S, strictly speaking, cannot be said to have a feature f and f cannot be said to exist in S unless the full account of f may be found in the nature of S.³⁰ It follows from the Principle of Self-Sufficiency and the Principle of Causal

25. For Descartes’ views about motion, see esp. *Principles of Philosophy* Part II, sects., 36–37. Like his ancient predecessors, Democritus and Epicurus, Gassendi takes motion to be intrinsic to matter; but unlike them he thought God put motion into atoms. He writes: “It may be supposed that individual atoms received from God . . . the requisite force for moving, and for imparting motions to others . . . , all this to the degree that he foresaw what would be necessary for every purpose he had destined them for.” See Gassendi, *The Selected Works of Pierre Gassendi*, 400–01.

26. VI i 490: L 110.

27. In this and related essays, it is not clear whether or not the Principle of Self-Sufficiency extends beyond primary features to those that are reducible to primary ones. I discuss this important question at the end of the chapter.

28. VI i 490: L 110. 29. VI i 492: L 112. My emphasis.

30. For the sake of simplicity, I have dropped the phrase ‘left to itself’ from the formal presentation of the principle, but the assumption of the Principle of Causal Self-Sufficiency is that the nature of S must by itself constitute the full account of the feature.

Self-Sufficiency that if the full account of *f* cannot be found in the nature of *S*, then *S* is not self-sufficient and *f* cannot exist in *S* (*S* cannot have *f*). The strategy of Leibniz's general argument in Part I of the *Confession of nature* derives from his firm conviction that because his opponents will want to make bodies self-sufficient, they will recognize the need for an incorporeal principle, namely, God. As we will see, although Leibniz becomes more sophisticated over the years about the position of the mechanical philosophers, he never doubts the truth of these original principles.

It is striking that Leibniz presents neither explanation nor argumentation for these claims. But of course there was no reason to do so: these assumptions come part and parcel with his commitment to the philosophy of Aristotle. As Leibniz understood the ancient thought, substance is both ontologically and explanatorily basic. It is the primary created thing, that on which all other created things depend, and it is that in terms of which everything else is explained. For example, the explanation of the fact that Wanda has both reason and blue suede shoes ultimately resides in her substance. Despite the various conflicting interpretations and accounts of Aristotle's metaphysics (of which Leibniz was well aware), Aristotelians generally did think of substance as that which causes and explains its essential features and, in this sense, as what is self-sufficient. Although in the *Confession of nature against the atheists*, Leibniz does not bring in the notion of substance, he soon will. What he emphasizes here is that anything that is self-sufficient is a thing that causes and explains its (primary) features. In his next essay, he will make this self-sufficiency the basis for his definition of substance.

Finally, before I explicate Leibniz's arguments in Part I of the *Confession of nature against the atheists*, I would like to make one more preliminary comment about Leibniz's assumptions. This last point is especially important, not only because it is crucial to a proper understanding of Leibniz's arguments, but also because it lays bare another of his fundamental metaphysical beliefs. He assumes that for everything in the world, there is a reason or *ratio* that (1) is in theory knowable and that (2) is so complete that it constitutes an explanation of why that thing and no other came about. The full significance of the arguments in the *Confession of nature against the atheists* has not been previously recognized because the notion of *ratio* around which the arguments turn has not been properly understood. It will be important to clarify this notion before turning to an analysis of the text.

In the preceding chapter, I suggested that the philosophical debate in the mid-seventeenth century is much more complicated than we tend to think of it today. Among other things, I indicated that there is an unusual richness of philosophical alternatives during the century due to the fact that the period not only saw the rise of the new mechanical natural philosophy, it also inherited the variety of philosophical traditions rediscovered and recombined by Renaissance humanists. The century is replete with scholastic, mechanical, and ancient doctrines as well as attempts to revise and amalgamate elements from these intellectual traditions. The sheer variety of philosophical alternatives available at mid-century creates an especially

complicated situation because there are so many philosophers who (like Leibniz) are interested in ancient philosophy as well as the new natural philosophy and who sometimes make indiscriminate use of the various, incompatible notions. It is significant that the period's confusion was evident to philosophers at the time. It was common for writers to exclaim that "there are as many philosophies as philosophers." In order to remedy this dismal state of affairs, thinkers like Johann Adam Scherzer insisted that their contemporaries agree on the definitions of key terms so that people might "philosophize with one mind."³¹ About the term 'cause,' for example, Leibniz himself complains: "neither Aristotle nor any of the Scholastics nor anyone since the beginning of the world has explained . . . the term 'cause'." Although philosophers like Suárez have tried to define the term "as what pours forth [fluere] being into another," Leibniz wonders "but what is this 'pouring forth [fluere] being into another'?" According to Leibniz, philosophers "have never understood this term of theirs, though they have used it so many times" and have resorted to "obscure terms and often metaphorical ones."³² Within this context, we should not be surprised to discover either that Leibniz himself used different causal notions or that the most important of these is firmly rooted in his Aristotelian background. Let's briefly consider the three distinct causal alternatives that we find in Leibniz's early writings.

The two causal terms that Leibniz uses most frequently in 1660s and that are relevant to the present discussion are 'ratio' and 'causa.' The latter he usually restricts to discussions about particular occurrences in nature. In the vast majority of his uses of 'causa,' the term designates a natural event or occurrence that brings something about.³³ Although what Leibniz has to say about causes in this sense is relevant to his account of the world, it is his notion of 'ratio' that is crucial to an understanding of Leibniz's theological demonstrations and their metaphysical assumptions.

In its causal sense, 'ratio' is usually translated by the English 'reason,' where its causal meaning is as broad as that of the English term.³⁴ That is, 'ratio', like 'reason,' is so general in its causal sense that it can comfortably accommodate almost any kind of causal link, however weak or strong. In this sense, it is also rather like the English preposition 'because of' in that it may apply to a very large variety of explanatory relations. The point I want

31. *Vade Mecum*, Dedicatio [iii–iv]. Also see, e.g., Weigel, *Analysis Aristotelica ex Euclide restituta*, 56; and Sturm, *Philosophia Eclectica*, 184, 189–91, 198.

32. VI i 551.

33. See, for example, II i 5, 19, 20, 21, 22, 23, 24, 57, 59, 63, 94, 95, 122.

34. The Latin term 'ratio' is ambiguous among a variety of senses, many of which Leibniz employs. He frequently uses the term, for example, as a relation between two quantities (see, e.g., VI i 171, 172, 480), as the reasoning or reckoning faculty (see, e.g., VI i 169, 267, 269, 482, 485), as a proof or demonstration (e.g., VI i 496, 499), and as the reason, motive, or ground for something (see, e.g., VI i 341, 464, 470). In fact, there are times when Leibniz uses all of these senses in one passage (see II i 117). What interests me here is the 'reason' or 'ground' sense of the term.

to emphasize here is that things that count as a *ratio* may vary greatly in their relation to the thing being explained. In Leibniz's works, both early and late, we find two very different kinds of *rationes*, those that count as a complete or sufficient reason for a thing and those that count as only a partial or incomplete reason. An incomplete *ratio* *r* may contribute to a thing *S* in the barest or most indirect way.³⁵ As long as *r* contributes in some way or other to *S*, it is appropriate to consider *r* a reason for *S*. An incomplete *ratio* need only have a minimal connection to *S*; the complete kind of *ratio*, what Leibniz sometimes calls a "plena ratio [complete reason]," constitutes the complete ground and source of *S*. A complete *ratio* is the sufficient condition for *S*. The notion of a complete *ratio* is closely linked to that of a complete explanation or account: if *r* is the complete *ratio* of *S*, then a complete account of *r* will constitute a complete explanation of *S*. In fact, according to Leibniz, *r* is a *ratio* for *S* in the strong sense if and only if an account of *r* constitutes a complete explanation of it.

Having distinguished between these two kinds of *rationes*, I would now like to turn to three passages written in the months just preceding the *Confession of nature against the atheists* in which Leibniz makes instructive use of the notion of complete *ratio*. These provide an appropriate introduction to Leibniz's use of the notion in that essay. Leibniz's *On the Combinatorial Art* of 1666 includes a section entitled "Problemata" in which he presents solutions to certain permutation problems. He introduces this section by explaining: "Three things should be considered: problems, theorems, and applications. We have added the application to individual problems wherever it seemed worth while, and the theorems also. To some of the problems, however, we have added the *ratio* of the solution."³⁶ Leibniz's discussion of the first problem consists of a statement of the problem, the presentation of its solution, and a demonstration of the success of the solution (that is, a demonstration of the fact that the procedure described in the solution successfully solves the permutation problem).³⁷ The importance of the demon-

35. See, e.g., VI i 59, 95, 346.

36. VI i 173: L 78. Loemker's translation of 'ratio' here as 'demonstration' bears witness to the fact that twentieth-century scholars have not paid sufficient attention to the subtleties of the use of the term in the period in general and in Leibniz's works in particular. Translators will sometimes render 'ratio,' when used in the sense of a complete reason or full account, as 'reason,' sometimes as 'ground,' and sometimes as 'demonstration.' Loemker was no doubt inclined toward his translation both because the *ratio* of the first solution includes a demonstration and because, among its common English meanings, 'demonstration' seems more appropriate than 'reason.' In fact, neither English term is quite right; it is clear that Leibniz has something else in mind here.

37. I will not give any details concerning these permutation problems because they are both very complicated and mostly irrelevant to the general point I want to make here about Leibniz's use of 'ratio.' However, it may be helpful to give some idea of them. For example, where the problem is "To Discover the Complexions for a Given Number and Exponent," Leibniz describes the solution to the problem as follows: "Add the complexions of the number preceding the given number, by the given exponent and by the exponent preceding it; the sum will be the desired complexions" (VI i 174: L 79). The demonstration shows that the procedure described in the solution does solve the problem. But the demon-

stration is not so much that it displays the success of the solution as that it allows the reader to grasp the solution's *ratio*: it constitutes a presentation of the reason for the success of the solution. Leibniz writes: "The *ratio of the solution* and the basis [fundamentum] of the table [included in the solution] will be exposed if we demonstrate that *the complexions for a given number and exponent arise from the sum of the complexions of the preceding number, for both the given and the preceding exponents.*"³⁸ This passage implies that the demonstration is a vehicle to the *ratio* in that it shows that the solution actually does solve the problem and, hence, reveals something about the reason for the solution's doing so. The solution solves the problem *because of the ratio*; the demonstration is what allows us to see that this is the case. That is, *r* is the reason for *S* where *r* includes all the factors that contribute to *S*'s actually solving the problem, and hence being the solution; the demonstration merely discloses this reason.

A similar conception of *ratio* occurs in the solution to the next problem. Leibniz writes about the solution that: "the *ratio* or *to dioti* [the because] is difficult to understand or, if understood, to explain. *To hoti* [the that] is evident from the table. . . . But, if anyone is interested in seeking the *ratio* for this, it will have to be discovered in the process of resolving used in the *Practica Italica.*"³⁹ Here again the *ratio* is the "complete reason" of the solution, and the process of resolving acts as the demonstration did above: it is the means by which one is able to comprehend *the reason behind* the solution. Leibniz is more explicit here about the relation between the solution and the *ratio*: the latter is "the because" of the solution, the that because of which the solution is a solution. So, again it follows that *r* is the ground for *S* where *r* includes all the factors that contribute to *S*'s solving the problem and hence being the solution. However, unlike the previous example, it is not so easy to comprehend the *ratio* in this case. The problem, as Leibniz notes, is that the complete reason or "the because" of the solution is difficult to grasp. Whereas the demonstration fairly straightforwardly presented the *ratio* of the preceding solution, here one has to work through a process of resolving in order to discover it. The *ratio* is comprehensible, but in this case requires more work and insight. Two points are worth emphasizing here: the *ratio* of the solution, although difficult to grasp, is nonetheless the complete reason of the solution; moreover, if it were possible to give a complete account of the *ratio*, then that account would be a complete explanation of the solution. The close link between explanation and *ratio* is unaffected by the fact that in this case it happens to be difficult to articulate the *ratio*.

There may be cause to wonder at this point whether or not the notion of *ratio* just explicated is restricted to mathematical solutions. Since the *Confession of nature against the atheists* seeks a *ratio* for corporeal features, we need to make sure that it is appropriate to apply the sense of *ratio* in these

stration also exposes the *ratio* of the solution, i.e., the reason behind the fact that the procedure is so successful.

38. VI i 175: L 79–80; Leibniz's emphasis. 39. VI i 176: L 80.

mathematical examples to the cases of corporeal features. Let's consider some other examples. It may be helpful to turn to the other explicit use of the term in the months prior to the *Confession of nature against the atheists*. In 1667, Leibniz published (anonymously) his *New Method for the Learning and Teaching of Jurisprudence*. The first part of this, entitled "Concerning a *Ratio* for Studies in General," develops an Aristotelian psychology and presents a general account of how to learn. Leibniz begins the essay by writing: "The *ratio* of studies is a certain kind of rational condition, that is, the rational condition that is itself a way of arriving at a condition of perfect actions. . . . This condition is called a 'Habit' which I define as a permanent but acquired readiness to act."⁴⁰ Leibniz is here able to describe the *ratio* rather straightforwardly; there is no need for a demonstration or process of resolving as a means to understand it. The *ratio*, Leibniz asserts, is a rational condition or habit, the that toward which the studies are directed. Although in this case the *ratio* is a kind of final cause, it functions exactly as it did above: it is "the because" or the complete reason of the studies. Leibniz goes on to develop a process of learning which he maintains will produce the right sort of rational condition. In this case, the organization of the studies follows from the *ratio* in the sense that the studies are organized in order to produce or promote the desired rational condition; the fact that the studies are so organized is a necessary and sufficient condition for the rational condition. Any student who satisfactorily completes the studies will acquire the rational condition. Once again, the *ratio* of the state of affairs or object *f* (here the studies so organized) is such that it includes all the factors that contribute to the existence of *f*.

At this point, it may be helpful to present a different sort of case as an example of what Leibniz seems to have in mind here. Let's suppose that a cooking instructor wants to explain to her class how to improve on their pastry dough. She may explain that one has to knead the dough in a specified way, paying attention all the while to a variety of seemingly irrelevant details (say, the precise stickiness of the dough, the temperature and texture of the working surface, etc.). Where the problem is how to make better pastry dough, each student may understand the instructor's proposed solution (to knead the dough in such a way, etc.,) without full conviction that it will work. If the instructor goes on to demonstrate that treating the dough in the specified way really does produce better dough, the students may then be convinced that the solution actually solves the problem without having the slightest idea as to why. In short, the students may understand the solution to the problem and agree that it is a solution, without an inkling as to *why* treating the dough in the specified way yields better results. If, however, they go on to experiment with the method themselves, study chemistry and the relevant parts of physics so that they can explain in detail why precisely this set of circumstances leads to this result in a way that different circumstances do not, then they will have understood the full reason or *ratio* be-

40. VI i 266: L 85.

hind the solution. In this case, they will have come to understand that the solution solves the problem *because of the ratio*.

Before attempting to summarize Leibniz's notion, let's consider briefly how some of his contemporaries understand the term. While it is true both that scholastic philosophers distinguish among several senses of *ratio* and that most of the prominent seventeenth-century philosophical lexicons do so as well, nonetheless there is a discernible underlying sense that is relevant here. Of the seventeenth-century lexicographers, Rudolph Goclenius offers in 1613 one of the most elaborate accounts of the term. He lists some of its uses in logic, philosophy, mathematics, and physics, and he notes what a variety of philosophers have had to say about it (e.g., Zabarella, Scaliger). But underlying all of these applications is the basic idea that a *ratio* is what "represents" the "nature" of the thing or is "the cause of the thing" and "is something that can be understood" by the intellect. Other philosophical lexicographers agree: H.L. Castanaeus explains in 1653 that most basically a *ratio* is "the nature and essence of the thing," the "cause of the thing," or what makes a thing what it is; and Johann Micraelius suggests in 1653 that the basic metaphysical notion is "the essence itself in respect to our understanding."⁴¹ In short, the two-part idea seems to be that the *ratio* is "the because" or nature of the thing (sometimes the lexicographer identifies it with the four Aristotelian causes) in the sense that it makes the thing what it is, and moreover that the *ratio* is such that if it can be understood, it is an object of thought that represents or captures that nature.

In conclusion, let's summarize both Leibniz's early use of the term *ratio* and the account given by some of his contemporaries as follows: for some feature or state of affairs *f*, a complete *ratio* for *f* has the following features: (1) it constitutes the necessary and sufficient condition for *f*; (2) it is peripicuous in that when one understands or apprehends it, one sees exactly how it is "the because" of the *f*, that is, why *f* follows; (3) it is such that in those cases when a full account of it can be given, that account constitutes a complete explanation of *f*; and (4) the *ratio* itself does not require a *ratio* of the same type.⁴² In this sense, to present the ratio of *f* is to explain it fully.⁴³

With this said, let's return to the analysis of Part I of the *Confession of nature against the atheists*. Leibniz presents three arguments, each of which

41. See Rudolph Goclenius, *Lexicon Philosophicum*, 954; H. L. Castanaeus, *Celebriorum Distinctionum Philosophicarum Synopsis*, 183; Johann Micraelius, *Lexicon Philosophicum Terminorum Philosophis Usitatorum*, 947.

42. I owe this last condition to Robert C. Sleight, Jr.

43. As Michael Frede points out, the ancients distinguished among different kinds of causes or different ways of bringing about or producing an effect. The perfect or complete cause is the one that does not depend for its causal efficacy on the agency of some other cause outside of it. For an account of the other sorts of causes and how these fit into a general theory of causation, see Frede, "The Original Notion of Cause." The important point here is that Leibniz is not alone in preferring causal completeness over incompleteness. While this preference is now anachronistic, there are ancient precedents, versions of which survived into the seventeenth century.

shows for some primary feature of body that the *ratio* of that feature is not discoverable in corporeal nature. The first argument concerns the features of magnitude and figure and runs as follows. (1) “The *ratio* of every affection [affectio] is derivable either from the thing itself [of which it is an affection] or from something extrinsic.” (2) A body is essentially that which exists in space and the space of a body is its magnitude and figure. (3) However, the *ratio* for some particular body with a particular shape (say, a square shape) cannot be found in its own nature since “the same matter is indeterminate as to any definite figure” (that is, the matter of a particular body does not constitute the *ratio* of its shape). (4) Nor can the *ratio* of a particular square body be found in any body outside of it. For, “if you say it was made square by the motion of another body, then you must explain the motion of the latter and so on” in which case “no complete *ratio* [plena ratio] for the figure will ever be given.” (5) “Therefore, it appears that the *ratio* for a certain figure and magnitude in bodies can never be found in the nature of bodies.”⁴⁴

Leibniz begins his second argument with an attempt to explain how the primary feature of motion (defined as change of place) can arise from the nature of body. He argues that bodies, as things that exist in space, do not constitute the *ratio* of motion, and concludes that “therefore, the *ratio* of motion cannot be found in bodies left to themselves.”⁴⁵ Leibniz insists that pointing to one body (as the cause of the movement of another) does not constitute the right kind of *ratio*. He writes:

But if they say that this body is being moved by another body contiguous to it and in motion, and this again by another, and so on without end, by no more have they presented the *ratio* why the first and second and third and any one whatever is moved as long as they do not present the *ratio* as to why the following one is moved and why all the antecedent ones are moved. For the *ratio* of a conclusion is not fully given as long as the *ratio* of the argument is not given [Ratio enim conclusionis tam diu plane reddita non est, quamdiu reddita non est ratio rationis], especially because the same doubt remains in the case without end.⁴⁶

In his third and final argument of Part I, Leibniz uses cohesion (*consistentia*) to show that this feature also cannot be explained by the nature of body itself. With this said and without further comment, Leibniz presents the conclusion of these arguments: “through the ultimate analysis of bodies, it becomes clear that nature cannot dispense with the help of God.”⁴⁷ In short, the three arguments have as their common conclusion that we do “need to resort to God” to explain appropriately the primary features of a body.

Leibniz’s argument in Part I is problematic: the subsidiary arguments (each directed at a different feature) are themselves less than transparent, and they do not in any obvious way imply their mutual conclusion. However, with the help of the assumptions articulated earlier, which function as implicit premises, we can recognize the subtlety of the argument and the

44. VI i 490: L 110–11. 45. VI i 491: L 111. 46. VI i 491: L 111.

47. VI i 492: L 112.

importance of its implication. Consider, for example, the first subsidiary argument. It is not at all apparent *why* the efficient cause of the squareness of a body does not constitute the right sort of *ratio*, nor exactly what sort of thing would. Although Leibniz asserts (in premise (4)) that in such a list of efficient causes “no complete *ratio* . . . will ever be given” and (in another quoted passage) that “the same doubt remains . . . without end,” he gives no indication of *why* this is the case. He merely assumes (see premise (4)) that a simple efficient cause of a feature *f* (the figure of a body) does not constitute the appropriate sort of *ratio* of *f*. He does not explain that an efficient cause is insufficient because it includes only one of the factors (here the active, efficient cause) that contributes to the existence of the features and hence that it only presents part of the account. In the text, Leibniz merely asserts that the simple efficient cause or reason is insufficient as the *ratio* of the primary features of bodies and that he is in search of a complete reason (*plena ratio*).

The distinction between complete and incomplete *rationes* renders the fundamental point in Leibniz’s argument transparent. Let’s reconsider a passage quoted above: “Setting aside all prejudices . . . I set my mind to the anatomy of bodies, to see whether it is possible to give the *ratio* . . . without supposing an incorporeal cause.” We can now see that Leibniz is not after an incomplete *ratio* or a simple efficient cause. Rather, he thinks that the search for an explanation of the relevant feature will come to a satisfactory end only with the discovery of a complete explanation of exactly how and why that feature and no other came about. That is, Leibniz seeks a complete *ratio*.

Besides the fact that each of the subsidiary arguments relies critically on the distinction between complete and incomplete *rationes*, Leibniz also makes crucial use of the Principle of Self-Sufficiency and the Principle of Causal Self-Sufficiency. I said above that as a pair, the Principle of Self-Sufficiency and the Principle of Causal Self-Sufficiency imply that, if the full account of a feature *f* of a being *S* cannot be found in the nature of *S*, then *S* is not self-sufficient and *f* cannot be said to belong to *S* (*S* cannot be said to have *f*). Thus, given the Principle of Self-Sufficiency and the Principle of Causal Self-Sufficiency and the fact that the full account of the primary features cannot be found in the nature of body, it follows that body is not self-sufficient and that the primary features cannot be said to exist in the nature of body. The conclusion of each of the subsidiary arguments crucially depends on this point. For example, in his first subsidiary argument, given the Principle of Self-Sufficiency and the assumption that bodies are self-sufficient, it follows from the definition of body (premise (2)) that the magnitude and figure of a body will be derivable from the nature of body itself. Because they are not so derivable (premises (3) and (4)), Leibniz reasons that body by itself does not constitute the right sort of *ratio* for its features ((5)). Given the Principle of Self-Sufficiency and the Principle of Causal Self-Sufficiency, it therefore follows that body is not self-sufficient and that magnitude and figure do not strictly speaking exist in or belong to

body. The Principle of Self-Sufficiency and the Principle of Causal Self-Sufficiency help us to decipher exactly what, according to Leibniz, the problem with body is.

So far so good. But to attain his final conclusion, Leibniz requires yet another assumption, namely, the *Principle of Sufficient Reason*, which in this context claims that, for every (primary) feature of body, there is a complete *ratio*. As with the other assumptions, Leibniz does not argue for this principle; he merely uses it. According to Leibniz, because there must be a complete *ratio* for each primary feature and because corporeal nature by itself does not offer such a *ratio*, it is necessary to assume an incorporeal principle. As Leibniz concludes this part of the *Confession of nature against the atheists*:

through the ultimate analysis [extrema resolutio] of bodies, it becomes clear that nature cannot dispense with the help of God. But since we have demonstrated that bodies cannot have a determinate figure, quantity, or motion, without assuming an incorporeal being, it readily becomes apparent that this incorporeal being is one thing in the service of all for the sake of the harmony of all things among themselves. Moreover, no *ratio* can be presented why this incorporeal being chooses one magnitude, figure, and motion rather than another, unless he is intelligent and wise. . . . Therefore, such an incorporeal being will be a mind ruling the whole world, that is, God.⁴⁸

What Leibniz seeks is a *ratio* for each and every determinate figure, quantity, and motion that is so complete that it explains exactly why “one magnitude, figure, and motion rather than another” occurs. Since no such *ratio* is discoverable in corporeal nature, he reasons that an incorporeal principle is required.

As a final point to make about Leibniz’s argument in Part I of the *Confession of nature against the atheists*, we should note that it fails as a criticism of mechanism: ironically, the position he argues for is consistent with at least some versions of the mechanical philosophy. Nonetheless, the essay is important for what it reveals about his original philosophical assumptions. The arguments of Part I use three significant metaphysical principles, which themselves help to reveal Leibniz’s dissatisfaction with the standard mechanical conception of body. As we shall see, the development of his first account of substance is motivated both by his continued dissatisfaction with the explanatory relation between body and its primary features and by his persistent commitment to the Principle of Self-Sufficiency, the Principle of Causal Self-Sufficiency, and the Principle of Sufficient Reason. The *Confession of nature against the atheists* also reveals Leibniz’s fundamental belief in the organization and harmony of the world. There will be ample time to talk about this early notion of harmony in chapter 6.

Having offered a proof for the existence of God, Leibniz turns to the immortality of the soul in Part II of the *Confession of nature*. We will have the

48. VI i 492: L 112. The Latin is: Ens incorporeale pro omnibus esse unicum ob harmoniam omnium inter se.

opportunity to investigate Leibniz's conception of mind and soul in the chapters that follow. The argument here is based on Leibniz's belief that because the mind has no parts, it is immovable, indissolvable, and therefore indestructible. The essential indivisibility of mind plays a crucial role in Leibniz's later conception of body and motion. Leibniz does not consider the exact relation between body and mind. He only mentions that bodies need an incorporeal principle, and that this is a ruling mind or God. He will worry about that relation much more in the months to come.

On transubstantiation

The Christian doctrine of the Eucharist had been a problem for philosophers for centuries, but the difficulty was never more politically acute than after the pronouncements of the Council of Trent. Among other things, the Council reaffirmed Catholic doctrine on transubstantiation by stating that at the consecration in the Mass, the substance of the bread and wine are changed into the substance of Christ, while the appearances (*species*) of the bread and wine remain.⁴⁹ Obviously, there are serious metaphysical difficulties posed by this doctrine. It entails, for example, that the same substance (the substance of Christ) is able to be in many different places at the same time and that the nature or substance of a concrete physical thing is able to change while its features remain. Leibniz neatly describes the problem in a text that probably dates from 1671. He writes: "The mysteries of the Eucharist are: the real presence and transubstantiation. These may be expressed in two propositions: (1) The one and same body of Christ which suffered on the cross for us is really present, that is, his substance, wherever there is the Eucharist Host; (2) under the appearance [species] of the bread, in the Eucharist Host, is the substance of the body of Christ."⁵⁰

The doctrine created particularly grave problems for mechanical philosophers like Galileo, Gassendi, and Descartes. As a consequence, many mechanists simply ignored the pronouncements from Trent. Descartes, for instance, tried to avoid the controversy as much as possible, writing in 1644: "For the extension of Jesus Christ in this holy sacrament, I have not explained it, because I was not obliged to do so, and because I abstain as far as I can from questions of theology."⁵¹ In Leibniz's essay of 1673–75, *On the true method in philosophy and theology*, he is explicit about the problems faced by the leading mechanical philosophers. Leibniz writes that Descartes has artfully evaded the mysteries of the faith by claiming to pursue philosophy rather than theology, as though philosophy were incompatible with religion, or as though a religion can be true that opposes truths demonstrated elsewhere. Once when he

49. For a more detailed account of the claims of the Council of Trent and related matters, see chapter 8, sect. 3.

50. VI i 515.

51. Letter to Père Mesland; AT IV 119. Sometimes Descartes was forced to consider the problem. See, e.g., AT VII 248–256; CSM 173–78.

had to discuss the Holy Eucharist, he substituted for real species only apparent ones, and thus revived a doctrine rejected by a universal consensus of theologians. But this would mean little, if his philosophy could allow bodies to exist in several places at once. For if body and space are one and the same, how can we avoid the consequence that in different spaces or places there must be different bodies?

Leibniz applauds philosophers like Gassendi “who in forming a theory of corporeal nature add to extension a certain resistance or impenetrability,” but he complains that “the absolute impenetrability of bodies” makes “it as difficult to see how a body can be in several places as how several bodies can be in the same place.” In other words, the physics of Gassendi and Descartes violate the requirements of the Council of Trent and are to be rejected on those grounds.⁵²

Leibniz wrote some notes on the problem of the Eucharist in 1668, the same year he wrote the essay *On transubstantiation*. The notes were written on a text by an English Catholic and mechanical philosopher, Thomas White. According to White, the mechanical philosophy could be used to explain the mysteries of faith, and he offered an account of transubstantiation that was supposed to be consistent both with scholastic terminology and the mechanical physics.⁵³ The details of White’s proposals need not concern us. What is important is Leibniz’s criticism of the mechanical philosophy based on its incompatibility with the metaphysics of transubstantiation. Although White offers a standard story about transubstantiation, according to which the substance of the bread is “annihilated” while the relevant qualities are left intact, Leibniz argues that such an account is unavailable to the mechanical philosophers. According to Leibniz, mechanists like White assume that the qualities of a corporeal object are like “the heat in fire” in that they necessarily flow from its essence “and are not able to be separated from the thing even by the absolute power of God.” Because such qualities “are necessarily in the subject in that they flow from its substance, and necessarily follow from it,” the mechanical account of transubstantiation is bound to fail.⁵⁴ By such succinct means, Leibniz cuts to the quick of the incompatibility between the (standard) mechanical philosophy and the standard account of transubstantiation: for any mechanist who claims that the sub-

52. VI iii 157–58; W 63–64.

53. Leibniz’s notes are on a preface that Thomas White (also called Thomas Albius and Thomas Anglus) wrote for the second edition of the book by his friend, fellow English Catholic and mechanical philosopher, Kenelm Digby. Digby’s book, *Two Treatises. In the one of which, the Nature of Bodies, in the other, the Nature of Mans Soule; Is Looked into: In the Way of Discovery, of the Immortality of Reasonable Soules*, went through a number of editions. I discuss some of Digby’s views in the next chapter. It is worth noting in this context that both White and Digby considered themselves Aristotelians who recognized the similarities between the ancient and new philosophies. For a discussion of White, see Beverley Southgate, “Covetous of Truth”: *The Life and Work of Thomas White, 1593–1676*. Southgate cites a manuscript that White wrote on transubstantiation in which he proposes that the miracle of the Eucharist involves the intermingling of flesh particles with bread particles (117).

54. VI i 503.

stance of a body is identical to its essence so that the substance of the bread just is its extension (or its arrangement of parts), no adequate account of transubstantiation is possible.

When Leibniz attempted to construct his own solution to the problem of transubstantiation in 1668, there was a good deal at stake: he accepted (a version of) the mechanical conception of physics which claimed that the features of objects like bread and wine were (somehow) reducible to the arrangement of their matter; he was committed to an Aristotelian conception of substance; and he was motivated to reconcile Catholic and Lutheran accounts of the Eucharist. That he offered a plausible solution to the theological problem while embracing these commitments bears witness to his conciliatory commitment and his philosophical finesse.

In the first few lines of *On transubstantiation*, Leibniz introduces his project. He writes in Part I:

We have undertaken with the help of God to show the possibility of the transubstantiation of bread and wine into the body of Christ who suffered for us, which the Catholic church teaches occurs at the time of consecration. It is to be demonstrated, accordingly, that: (1) Bread and wine, losing their own substance, acquire the substance of Christ's body; (2) and become numerically identical with it everywhere; (3) only their appearance [species] or accidents remain; (4) the Substance of the body of Christ is present in all places where the appearance of the consecrated bread and wine exists.

The success of the demonstration, according to Leibniz, depends on the interpretation of the terms of the relevant scholastic notions, which "we will explain very clearly."⁵⁵ Because the details of Leibniz's demonstration are both complicated and important and because one of my main goals in this chapter is to excavate his underlying assumptions about substance, the focus here is on those parts of the essay that are directly relevant to that goal. I will return to the other parts of the demonstration in chapter 6. Leibniz writes:

1. *Substance* is a being that subsists per se.
2. *A being that subsists per se* is one that has a principle of action within itself [in se]. . . .
3. Whatever has a principle of action within itself, if it is a body, has a principle of motion within itself. Indeed every action of a body is motion. Because every action is a variation of essence, every action of a body is a variation of the essence of body. The essence or definition of a body is being in space. Therefore a variation of the essence of body is a variation of existence in space. Variation of existence in space is motion. Therefore every action of a body is motion. . . .
4. No body apart from a concurring mind [praecisa mente concurrente] has a principle of action within itself. This has been demonstrated in Part I of the *Catholic demonstrations* [that is, in the *Confession of nature against the atheists*], where the existence of God is proved.
5. Therefore no body taken apart from the concurring mind is a Substance.⁵⁶

55. VI i 508: L 115.

56. VI i 508: L 115–116. In the same way that Aristotle's notion of cause (*aitia*) is quite dif-

We find here for the first time a principle that is fundamental to Leibniz's way of conceiving of substance and the key to his account of transubstantiation. This assumption, which I will call the *Principle of Substantial Activity*, assumes that a being S is a substance if and only if it subsists per se and S subsists per se if and only if it has a principle of activity within itself (in se). That a substance is essentially what acts and, hence, is what has its own principle of activity is a view from which Leibniz never wavers. By such means, *On transubstantiation* goes beyond what was said in the *Confession of nature against the atheists* and explains exactly why corporeal nature needs an incorporeal principle. In the latter, Leibniz insisted that bodies are not self-sufficient and cannot "subsist without an incorporeal principle" because a full account (or *ratio*) of their primary features cannot be found in their nature. By means of the Principle of Substantial Activity, Leibniz now helps us to understand both why an incorporeal principle is needed and what connection there is between an incorporeal principle and a complete *ratio*. That is, where the *Confession of nature against the atheists* insists on the necessary relation between self-sufficiency and complete *ratio* (the Principle of Self-Sufficiency claims that a being S is self-sufficient if and only if a complete *ratio* of its features can be discovered in S), *On transubstantiation* offers an explanation of this. In the quoted passage, Leibniz explains exactly what it is that incorporeal nature has and corporeal nature lacks such that the latter is insufficient without the former: bodies do not subsist per se and cannot constitute a complete *ratio* of even their primary features because they lack a principle of activity. They need an incorporeal principle exactly because they need a principle of activity, and they need a principle of activity in order to cause their features. Without a source of activity to cause their primary features, bodies would have none.⁵⁷ In the second part of *On transubstantiation*, Leibniz again proclaims: "I call substance an entity subsisting per se," and then insists that, as the scholastics claimed, such entities are substantial individuals that act.⁵⁸

Leibniz also articulates here for the first time what differentiates mind from body: the former has its own principle of activity, while the latter has to acquire its activity through union with mind. Given the Principle of Substantial Activity and the fact that only mind has its own principle of activity, it follows that body needs mind to "complete" it or to make it substantial. It also follows that because mind has its own principle of activity, it not only constitutes the substance of body, it is itself a substance.

ferent from our own, so is his notion of principle (*archê*). The exact meaning and uses of *archê* have been much debated, but it is fair to say that for Aristotle (and for Leibniz), a principle is an origin or source. So, for Leibniz, a principle of activity is a source of activity. For a clear discussion of the differences between our notions of principle and cause and those of Aristotle, see Charlotte Witt, *Substance and Essence in Aristotle: An Interpretation of Metaphysics VII-IX*, esp. 15–19.

57. In fact, a complete *ratio* contains more than just a principle of activity. As we will see later, it also contains a set of instructions or blueprint for how it will act.

58. VI i 511: L 117.

Let's be clear. From what Leibniz has said thus far, each corporeal substance itself contains a substance in the sense that it contains its own principle of activity. The remainder of the passage confirms the point that mind is both a substance itself and a constituent of the substance it creates with body. Leibniz continues:

8. Whatever is taken with concurrent mind is Substance; whatever is taken apart from it is accident. Substance is union with mind. Thus, the Substance of a human body is union with human mind; the Substance of bodies which lack reason is union with the universal mind or God. . . .
9. Therefore, the Substance of body is union with sustaining mind.
10. That whose Substance is in union with a concurrent mind is *transubstantiated* when its union with the concurring mind is changed.
12. Therefore the bread and wine as bodies, when the concurrent mind has been changed, are transubstantiated into the body of Christ or taken up by Christ. Q.E.D.⁵⁹

Leibniz's solution to the problem of transubstantiation depends both on a careful distinction between mind and body and on the fact that anything with a principle of activity is itself a substance. According to Leibniz, there are two distinct kinds of things whose every action is a variation of essence: mind lacks extension and is an essentially thinking thing whose every action is thought; body lacks a principle of action and is an essentially extended thing whose every action is motion. The essence of a body, say, the bread, remains unaffected by the mind sustaining it. Leibniz writes: "the concurring mind . . . does not give or take away essence."⁶⁰ As Leibniz makes clear later in the essay, God is "the Substance of [non-human] things, but not the essence of them."⁶¹ Because Leibniz here defines substance in terms of activity and because mind is the source of activity, the right change of mind is sufficient for transubstantiation. When the mind of Christ replaces the previous mind, the essence of the bread and its appearances remain the same, only its mind, which contains its principle of activity, has changed.

It would be helpful to understand a bit more about the relation between mind, activity, and substance. The next two parts of the demonstration offer some insight:

- [Part] II. 13. If a body consecrated and appropriated by the mind of Christ has the same concurrent mind as the glorious body of Christ who suffered for us,
14. it has numerically the same substantial form or substance as the body of Christ who suffered for us, by number 9.
 15. Accordingly the bread and wine in transubstantiation are the numerically identical substance as the body of Christ who suffered for us. Q.E.D.

59. VI i 509; L 116; Leibniz's emphases. The numbered premises of the demonstration go directly from 10 to 12.

60. VI i 509; L 116. 61. VI i 512; L 118.

- [Part] III.16. A body which is thus transubstantiated is changed in no way except in the substantial form . . . of the concurring mind, by number 9.
17. That in which nothing is changed except the concurrent mind can retain all its qualities or accidents or, if you prefer, appearances [species]. For mind is compatible with all accidents to which it does not give or take away essence, but only action.
 18. Therefore, all accidents or appearances [species] are preserved in the transubstantiated bread and wine: extension, firmness, color, odor, etc., can remain. Q.E.D.⁶²

In this passage, Leibniz equates substance with substantial form. The implication is that the substantial form contains the principle of activity. Because the substantial form has a principle of activity, it is itself a substance; because it supplies a body with activity, it is also the substance of that body. By such means, Leibniz offers a solution to the problem of transubstantiation that is unavailable to mechanical philosophers like Gassendi, Descartes, and White: because the substance of the body for Leibniz is not constituted of its matter (or *res extensa*) but its substantial form, because the substantial form for non-human substances is God, and because this substantial form can be in several different places simultaneously, the substance of Christ can simultaneously be the substance of the bread in Rome as well as the bread in Augsburg. Moreover, because the substantial form most certainly is “under the appearance of the bread,” the substance of Christ has replaced the substance of the bread and yet the appearances of the bread remain. By such means, the metaphysical problem posed by the doctrine of transubstantiation is neatly solved.⁶³

There are several points to emphasize about the proposals in *On transubstantiation*. First, Leibniz retains a mechanical conception of body in that corporeal features are reducible to the essence of the body. At the same time, he conceives of substance in terms that are fundamentally Aristotelian: a passive principle (here, matter or *res extensa*) is combined with a substantial form to constitute a non-human substance. He equates mind and substantial form and implies that the substantial form contains a principle of activity and hence is a substance. Finally, it is important to note that this essay bears witness to the development of Leibniz’s ideas about substantial self-sufficiency: given the Principle of Substantial Activity, the Principle of Self-Sufficiency, and the notion of complete *ratio*, it follows that substances will be exactly those things that have their own source of activity, which is necessary in order to give a complete *ratio* for their features. Leibniz implies in his demonstration that a body is not itself a substance because it does not subsist in itself and it does not subsist in itself because it lacks an active principle. It becomes part of substance when it is joined to mind or substantial form and thereby acquires an active principle that can act as a source

62. VI i 509; L 116.

63. However, for complicated reasons that I will discuss in ch. 8, sect. 4, the metaphysical problems posed by the Lutheran doctrine of real presence have not been sufficiently solved.

of those features. The principle that Leibniz assumes here, which is an extension of the Principle of Self-Sufficiency and the Principle of Substantial Activity and which I will call the *Principle of Substantial Self-Sufficiency*, may be put as follows: a being S is a substance if and only if it is self-sufficient and S is self-sufficient if and only if the full account or complete *ratio* of all of its features can be discovered in the nature of S. But Leibniz also offers here the beginning of an account of substantial form, where the basic idea is that a substantial form is something mind-like that contains a principle of activity and that contributes to the self-sufficiency of the substantial nature of which it is part. The lesson of the demonstration offered in *On transubstantiation* is clear: Leibniz is in the process of developing his own conception of substance, one that is significantly different from the mechanical conception (although consistent with mechanical physics) and one that is self-consciously Aristotelian.

That the notion of substance presented in *On transubstantiation* is roughly analogous to an Aristotelian conception of substance is a fact that Leibniz is happy to acknowledge. Upon the conclusion of his account of transubstantiation, he discusses at length the similarity of his account of substance in general and of substantial form in particular both to that of Aristotle and to the proposals of other philosophers scattered throughout the history of philosophy. Leibniz emphasizes both the ancient roots and the conciliatory nature of his proposals. He claims that this “philosophizing of ours differs little from the received [i.e., Aristotelian] philosophy”; where he has improved on that philosophy is in the clarity with which he defines scholastic terminology.⁶⁴ According to Leibniz, the result is better and clearer than the original and more in agreement “with Aristotle himself and the noblest of his followers.”⁶⁵ In his concluding comments, Leibniz insists that his account will appeal to most philosophers, regardless of their philosophical perspective. He lists a number of Aristotelian philosophers (e.g., Averroës, Murcia de la Llana) and non-Aristotelian (e.g., Plato) and maintains that they would all agree with “these theorems of ours.” Leibniz is especially insistent that his conception of substantial form is like that of Aristotle, while his account of individuation is like that of Zabarella and others. In short, Leibniz takes the theory of substance on which his account of transubstantiation is based to be a means to reconcile various philosophical schools.

Before turning to the next theological essay, it is worth calling attention to a problem concerning the status and source of the nature of body as Leibniz presents it in this essay. According to Leibniz, a body is “a being in

64. VI i 510: L 117.

65. VI i 511: L 118. By lifting a few sentences of *On transubstantiation* out of context, Robert Adams constructs a reading of the text, according to which God relates to non-human bodies by thinking them. Not only does Adams’ reading contradict, as we will see, many other texts of the period, it is hardly consistent with what Leibniz says here about the agreement between his view and Aristotle’s. For Adams’ discussion, see *Leibniz: Determinist, Theist, Idealist*, pp. 358–60.

space” that combines with mind to form a non-human corporeal substance. He also states that mind does not “give or take away essence.”⁶⁶ The clear implication is that a body has an essence that is somehow distinct from the mind with which it joins to form a substance. Leibniz is perfectly clear that the concurrent mind constitutes the “substances, but not the essences” of bodies.⁶⁷ As noted, his ability to solve the problem of transubstantiation while retaining mechanical physics depends on that distinction. But it is not clear in the essay what the source of the essence of body is. The answer to this question constitutes one of the major developments in Leibniz’s thought in 1668.

Conspectus

I now turn to a piece that is closely related to the *Confession of nature against the atheists*. The *Conspectus*, as an outline of the *Catholic demonstrations*, is interesting for what it reveals about Leibniz’s plans and presuppositions. The range of topics that Leibniz intended to include in this grand work is astonishing: from the possibility of the immaculate conception and the salvation of non-Christians to the nature of space, body, and angels. Because the outline contains important insights into Leibniz’s original conception of the relation between God and creatures, we will return to this text in chapters 6 and 7. The *Conspectus* is important here for what it reveals about the progress that Leibniz’s thought has made since the *Confession of nature against the atheists*. In Part I of the *Conspectus*, entitled “Demonstration of the Existence of God,” Leibniz lists his first principles; the first three are: (1) “there is nothing without a *ratio*,” (2) “there can be no motion without continual creation;” and (3) “there is nothing in bodies that constitutes the origin of motion.”⁶⁸ These three principles suggest that the argument for the existence of God is here (in bare outline) fundamentally the same as it was in the *Confession of nature against the atheists*: because the complete *ratio* of the (primary) features of bodies cannot be discovered in corporeal nature, there must be an incorporeal principle, namely, God. However, each of the three principles in the *Conspectus* represents a development in Leibniz’s views since the composition of the *Confession of nature against the atheists*. In principle (1), Leibniz not only makes explicit what was only implicit in the earlier work, he extends the range of the assumption. Whereas in the earlier text, the Principle of Sufficient Reason seemed to apply only to the (primary) features of body, now it applies to everything. That is, Leibniz is now willing to assert that for everything there is, there is a complete *ratio*.⁶⁹ This is more than just the first explicit statement of the

66. VI i 508–09: L 116. 67. VI i 512: L 118. 68. VI i 494.

69. The Academy editors place the composition of the *Conspectus* within the period 1668–69 and that of *On transubstantiation* within 1669 (see VI ii 571–72). On my analysis, there are two reasons to think that the *Conspectus* was written after *On transubstantiation*: the *Conspectus* includes the first statement of the principle of continual recreation and the first *explicit* statement of the Principle of Sufficient Reason. That Leibniz considered the devel-

Principle of Sufficient Reason, it is an articulation of Leibniz's fundamental commitment to the harmony and intelligibility of the world. Against the background of the notion of complete *ratio*, the view seems to be that for everything in the world, there is a complete explanation of exactly why it and no other came about. Principle (2) of the *Conspectus* reveals that Leibniz accepts a version of the doctrine of continual recreation. This means that the relation between mind and body has changed. The supreme being still provides the cause and account of motion, but it does so in a new way – namely, by continually recreating bodies.⁷⁰ Finally, principle (3) indicates that Leibniz has come to understand the centrality of motion in explaining corporeal features and, hence, in arguing for the existence of God. Since writing the *Confession of nature against the atheists*, Leibniz has identified the crucial explanatory role that motion plays in accounting for the features of bodies, and this has allowed him to streamline his argument for the existence of God. He has come to understand that since corporeal features are to be explained in terms of matter in motion, the crucial point to make in arguing for God's existence is that the origin of motion cannot be found in body. Thus, in order to explain corporeal features, we have to resort to God.

The *Conspectus* bears witness to the fact that Leibniz's opinions about the various philosophical problems that cluster around the topic of substance are evolving in important ways during the period. He explains in his letter to Thomasius of April 1669 that since writing the *Confession of nature against the atheists*, he has “penetrated much more deeply” into the issues discussed there and has “found out about the perpetual creation involved in motion, and about the innermost nature of a thinking being or a mind.”⁷¹ It is noteworthy that Leibniz's ideas are developing in such significant ways while he is working on the theological topics of the *Catholic demonstrations*.

Demonstration of the possibility of the mysteries of the Eucharist

Among the notes that Leibniz wrote on the problem of the Eucharist between 1668 and 1671 and that the Academy editors entitled *Deomnstration of the possibility of the mysteries of the Eucharist*, the most relevant for us are some comments made on a text by Thomas White. Leibniz's comments show an impressive grasp of both scholastic terminology and the whole range of problems that the mystery of the Eucharist produced. What is of particular interest to us now are some suggestions that Leibniz makes about the nature of body. In Leibniz's opinion, White and others think that the substance of

opment of the doctrine of continual creation fairly important is clear: he writes to Thomasius in 1669 that since the *Confession of nature against the atheists*, he has “found out about the perpetual creation involved in motion” (II i 24: L 102). Since Leibniz does not use this doctrine in *On transubstantiation*, it is unlikely that he had yet “found” it.

70. In chapter 4, I will discuss Leibniz's views about continual creation at greater length. For now, it is worth noting that his position is not that of occasionalism.

71. II i 24: L 102.

something is that which is indivisible in the thing, but they admit that this “is very difficult to understand.”⁷² Leibniz lists other difficulties and unclari- ties facing White’s account of the substance of Christ, and then sides with Aristotle in claiming that “there is something in body that relates [pertinere] to substance and that consists in what is indivisible.” This “is to some extent active and can easily be called *form* in the Scholastic Style; it is to some extent passive and is rightly called *matter* in the sense of the Scholastics.”⁷³ Leibniz offers here the key to his original conception of body. To understand the place it has in his notion, one need only grasp exactly how the same thing can be both active and passive, both substantial form and matter.

Leibniz offers the explanation of this paradoxical claim in the only other text of the period where he explicitly discusses the relation between form and body. The text, a letter to Thomasius of October 1668, is a rough summary of the conceptions of substantial form, matter, and substance. As a whole, the letter is helpful for what it reveals about the motivations behind Leibniz’s views. According to Leibniz, “the obscurity” of the Aristotelians was due to “scholastic smoke” and “Aristotle himself agrees remarkably well with Galileo, Bacon, Gassendi, Hobbes, Descartes, [and] Digby.”⁷⁴ Given our concerns, the most important points that Leibniz makes in the letter may be summarized as follows: he claims (1) that “the prime matter of Aristotle [is] . . . inert mass [moles] without motion and . . . *figura*;⁷⁵ (2) that the origin of motion is God; (3) that *figura* or “form results from the potential [potentia] of matter;” (4) that this *figura* “is the source of all the affections or sensible qualities;” (5) that we can call this “innermost *figura* of parts [intima partium figura]” ‘substantial form’ because (a) it can be distinguished from matter, (b) it is prior to everything else concerning body, and (c) it is in terms of it that we explain all the appearances or qualities of the body.⁷⁶

These points are most easily explained as a group. According to Leibniz, prior to all motion, what we think of as body is merely inert matter every-

72. VI i 502. 73. VI i 502. 74. II i 10.

75. II i 10. The Latin term *figura* has at least two rather different senses. It can mean, on the one hand, either form, shape, or figure and, on the other, nature, kind, or species. Similarly, the Latin *forma* is ambiguous between shape or figure and nature or essence. There are three points to emphasize about Leibniz’s use of *figura* in this letter to Thomasius. First, the *forma* or *figura* qua shape and the *forma* or *figura* qua nature or essence are here fundamentally related. Leibniz clearly thinks that the *figura* or *forma* qua nature of a body is an organized arrangement of parts of matter and, as such, is “the source” of the shape the body has. In short, the shape of a body follows from its nature. Second, Leibniz is here much more interested in the *figura* qua nature of the body than qua shape; indeed, his major concern is with the fact that the parts of matter so organized constitute the *figura* or *forma* qua nature of body. Understanding the text depends on keeping distinct the two senses of *figura*. Finally, because Leibniz here takes the nature of a body to be an arrangement of parts of matter, *figura* qua nature is most appropriately understood as *arrangement* or *organization*. That this is what Leibniz has in mind will become clear in what follows. Nevertheless, it seems appropriate to stay as close to Leibniz’s original meaning as possible and not to translate the Latin *figura*. This will help to reveal the complexity of the text.

76. II i 11.

where the same without division or distinction. This inert stuff is what the Aristotelians call 'prime matter' (point (1)). God acts on it through motion, so that combinations of matter in motion arise (point (2)). "The *figura* [,] arising from such a combination of motions, comprises this orderly arrangement of parts."⁷⁷ That is, the inert matter, once moved, becomes arrangements of parts of matter or *figurae* (point (3)). Since God is (in a sense yet to be explained) the principle of action and since there is a *figura* only if there is motion, it is clear that matter is first individuated and then maintained as a *figura* through the active principle in God. But even though God maintains the *figura*, the *figura* still has its own nature: it is the totality and arrangement of its parts. This implies, first, that *figura* is distinct from matter (point (5a)): it is, after all, an organized arrangement of matter. But it also implies that *figura* is the nature of body and can be said to be prior to everything else concerning body (point (5b)). Because all the features of bodies (e.g., squareness, heat) are reducible to and explained by the arrangement of their parts, it follows that the *figura* is that in terms of which we explain all the features of bodies (point (5c)). Understood in this way, it does not seem so far-fetched to call *figura* "substantial form." Even though God acts as its principle of activity, the *figura* does constitute the innermost nature of body (point (5)) and the source of its affections (point (4)). In other words, although the *figura* does not have the *causal* priority and self-sufficiency that Aristotle requires of substantial form, it has some of the other characteristics that Aristotle attributes to this fundamental principle. For example, *figura* so understood constitutes the nature of bodies and the source of its features. As Leibniz writes, "nothing prevents us from calling this arrangement the 'inner prime form' of a body."⁷⁸

This interpretation of the relation between matter and form helps to explain Leibniz's comments on Thomas White's text. According to Leibniz, there is something in body that is somehow active (and hence called form) and somehow passive (and thus called matter). It now seems fairly clear that this is *figura* understood in the way just explained. The *figura*, when passive, is merely matter; when active (that is, when it is made active by God), is form. But in his comments about White, Leibniz also adds that this something "relates to substance" and "consists in what is indivisible."⁷⁹ Again, *figura* conforms. The indivisibility of the *figura* consists in the fact that the survival of the *figura* is dependent upon its not being divided; once a particular *figura* is divided, it ceases to be that *figura* or that arrangement of parts. Leibniz explains in the April 1669 letter to Thomasius that in the same way the "generation of a form occurs in an instant," it "cannot be increased or decreased."⁸⁰ The point seems to be that since the *figura* is the totality of its parts, if any part is taken away or added, the original *figura* does not survive. It is also fairly straightforward how the *figura* is supposed

77. "[F]igura a complexione motuum orta, ipsam partium dispositionem complectitur" (II i 10).

78. II i 10. 79. VI i 502. 80. II i 18: L 97.

to “relate to substance.” For if the *figura* is created and maintained by the principle of activity in God, then it clearly relates to God and, hence, to a substance in a fairly unproblematic way.

At the end of my analysis of *On transubstantiation*, I mentioned a problem that Leibniz had left unsolved. In that essay, Leibniz claims that a non-human corporeal substance is formed from the union of body and mind, where the body is supposed to have an essence. I asserted that there is a question about the status of the essence of body: Leibniz does not explain in the essay exactly what the source of that essence is. Once we combine the notes on White with the October 1668 letter to Thomasius, we can both detect an answer to the question and discern the relation between mind and body: a body whose material parts are inactive (that is, body *qua* matter) is merely passive, inert stuff, and in that sense is not *a* body at all; a body whose material parts are active (that is, body *qua* form) is an organized arrangement of parts or a *figura*. God is the principle of activity that individuates matter and then maintains it as a *figura*. Once God activates its matter, body has its own essence: it is essentially *this* organized arrangement of parts, this matter in motion. By working out the details of how body is supposed to arise out of matter and mind while having its own essence, Leibniz has taken an important step toward constructing a viable version of Aristotelian substance, one that can satisfy the requirements of mechanical physics.

In chapter 1, I claimed that Leibniz intended to construct a true philosophy out of the doctrines of the major philosophical traditions; in the next chapter, I argue that the letter to Thomasius of April 1669 is his first attempt to articulate the conception of substance that stands at the center of his *Metaphysics of Substance*. In this section, I have suggested that Leibniz’s original metaphysical assumptions developed in response to particular theological demands. By unveiling the fundamental (albeit implicit) assumptions of Leibniz’s early thought, this analysis has prepared the ground for an account of Leibniz’s original conception of substance and the development of his metaphysics more generally. Only with the help of Leibniz’s notion of complete *ratio* and his Principles of Substantial Activity, Substantial Self-Sufficiency, Causal Self-Sufficiency, and Sufficient Reason are we able to discern the subtle complications of Leibniz’s early thought.⁸¹

81. Philip Beeley has argued that the major motivation behind the development of Leibniz’s early metaphysics is the problem of the continuum, and he cites the October 1668 letter to Thomasius and the notes on White’s text as examples of Leibniz’s early interest in that problem. While it is surely true that the continuum problem was one of the issues that engaged the young man at the time, it was not his primary concern. The juxtaposition of the October letter, the notes, and the theological essays makes it clear that, while Leibniz was keen to solve the problem of the continuum, there were a number of other problems to which he attached equal weight. His primary concern was to solve all of these in a manner that would reconcile the religious and philosophical sects of his period. For Beeley’s analysis of some of the texts discussed in this section, see *Kontinuität*, chs. 4–6; for his comments on the problem of the Eucharist for early Leibniz, see esp. 75–81. I return to matters concerning the problem of the continuum in ch. 7.

3. Leibniz's Aristotelian assumptions

Seventeenth-century religious strife reached a bloody peak during the Thirty Years War, which ended in 1648, two years after Leibniz's birth. When Leibniz began the conciliatory *Catholic demonstrations* in 1668, many German intellectuals faced an unstable political, religious, and intellectual scene. Since one of the major worries among Leibniz's relatively conservative contemporaries was (what they perceived to be) the radical materialism of the new mechanical philosophy⁸² and since one of the major disagreements between the Catholics and the various Protestant sects concerned the doctrine of the Eucharist, it is hardly surprising that Leibniz's first ecumenical essays concerned these topics. In the *Confession of nature against the atheists*, Leibniz accepts the explanatory model of the mechanical physics, but argues that its metaphysical foundations are inadequate. In *On transubstantiation* and his notes on Thomas White, Leibniz struggles with the Catholic teaching about the Eucharist. With impressive philosophical finesse, he manages to remain consistent with mechanical physics and with Tridentine demands. In the next chapter, I discuss Leibniz's first full-blown account of substance in a letter to Thomasius of 1669. We will see there how his synthesis of the mechanical physics and the Aristotelian metaphysics of substance is supposed to work. But I want to emphasize the fact that Leibniz begins to construct the details of his original metaphysics within the context of this elaborate set of theological demands and that at its center stands a reconsideration of the notions of substantial form and substantial nature.

Before turning to Leibniz's original theory of substance, it will be helpful to summarize the assumptions articulated in this chapter and then to unpack their most obvious implications. The assumptions used in the theological writings of 1668 are as follows:

- *The Principle of Self-Sufficiency* assumes that a being S is self-sufficient if and only if the complete *ratio* for its features can be discovered in the nature of S.
- *The Principle of Substantial Self-Sufficiency* assumes that a being S is a substance if and only if S is self-sufficient.
- *The Principle of Causal Self-Sufficiency* assumes that for any being S, strictly speaking, S can be said to have a feature f and f can be said to exist in S just in case the complete *ratio* for f can be found in the nature of S.
- *The Principle of Substantial Activity* assumes that a being S is a substance if and only if it subsists per se and S subsists per se if and only if it has a principle of activity within its own nature.
- *The Principle of Sufficient Reason* assumes that, for everything there is, there is a complete *ratio*.

82. I will say more about the standard German response to the mechanical philosophy in the next chapter.

The notion of a complete *ratio*, assumed in these principles, may be summarized as follows:

- For some state or feature *f*, a *complete ratio* of *f* (1) constitutes the necessary and sufficient condition for *f*; (2) is perspicuous in that, in those cases where one can understand it, one sees exactly why *f* as opposed to some other state of affairs came about; (3) is such that in those cases when a full account of it can be given, that account constitutes a complete explanation of *f*; and (4) the *ratio* itself does not require a reason of the same type.

This notion of complete *ratio* along with the Principle of Sufficient Reason implies two other assumptions that Leibniz makes during his early years:

- The *Logical Assumption* claims that, for any state or feature *f*, the logically necessary and sufficient conditions of *f* exist and in theory can be articulated.
- The *Intelligibility Assumption* claims that those conditions are in theory intelligible. It is important to note that, when taken with the Principle of Causal Self-Sufficiency, the Intelligibility Assumption implies that for any feature *f*, *f* cannot be said to belong to a being *S* unless one can in theory understand how the nature of *S* acts as the cause of *f*.

These assumptions imply a good deal about substance. According to the Principle of Substantial Activity, each substance will have a principle of activity *in its nature*; according to the conjunction of the Logical Assumption and the Principle of Causal Self-Sufficiency, for every feature *f* that strictly belongs to *S*, there will be a set of necessary and sufficient conditions in the nature of *S* that will constitute the complete *ratio* of *f*; and according to the Intelligibility Assumption, those conditions in *S* are in theory intelligible.⁸³ In the discussion of the essay *On transubstantiation*, I noted that Leibniz equates substantial form and mind, where the basic idea is that a substantial form is something mind-like that contains a principle of activity and that contributes to the self-sufficiency of the substantial nature of which it is part. Once we piece together these clues, we obtain two further assumptions. I date one of these because we will have reason to revise it in chapter 4 and again in chapter 8:

- The *Substantial Nature Assumption* claims that, for every substance *S*, it has a nature that contains the set of necessary and sufficient conditions or the complete *ratio* for those features that strictly belong to it and moreover those conditions are in theory intelligible.
- The (1668) *Substantial Form Assumption* asserts that, for every substance *S*, *S* will have a (mind-like) substantial form that contains the principle of activity of *S*.

83. In fact, because of their complexity, only God will understand them, but it was important to Leibniz, as Rutherford has so nicely pointed out, that nature is fundamentally rational, and in that sense suited to rational beings. See *Rational Order*, passim.

It is significant that Leibniz does not think it is necessary to argue for these assumptions: the intelligibility of the world follows from his belief in the wisdom of God; the self-sufficiency of substances from his commitment to the philosophy of Aristotle, as he interpreted it. It is important to understand that the young Leibniz took the created world to be a place in which everything was thoroughly explicable and that this view followed from his assumptions about the nature of God. We will have to wait until chapter 5 for an account of the basic assumptions behind his *Metaphysics of Divinity*, but I will note here that the Principle of Sufficient Reason has its roots in Leibniz's belief that such orderliness is a necessary feature of any world created by God.

That Leibniz was well aware of the various conflicting interpretations of Aristotle's metaphysics is clear. It is also evident that some of his assumptions about substance go beyond anything that twenty-first-century scholars might consider genuinely based on the texts of Aristotle. But it is also important to note both that Leibniz considered his views about substance thoroughly Aristotelian and moreover that they do correspond to the most fundamental of Aristotle's views. For example, one can safely say that, for Aristotle, substance is that in terms of which everything else can be explained, and a concrete individual substance is what causes and explains (at least) all of its essential features. Leibniz's metaphysical assumptions reveal how he understood the Aristotelian claim that substances are the ultimate explanatory principles. For him, most fundamentally, substances are self-sufficient. This means that they have their own principle of activity by means of which they act as the cause and explanation for their primary features. The Principle of Substantial Self-Sufficiency and the Substantial Nature Assumption reduce to the same basic intuition, namely, that substances contain the cause and explanation for what they are and what they do. It follows that each individual substance is the complete *ratio* for (at least) its primary features and moreover that the totality of substances is the source of activity – and hence the cause and explanation – for everything that happens in the world. In short, the metaphysical assumptions presented here reveal how Leibniz interpreted Aristotle's account of substance. The listed assumptions constitute the truths that he borrowed from Aristotle's philosophy and with which he intended to build his own true metaphysical system. It seems appropriate therefore to refer to these principles in the chapters that follow as Leibniz's *Aristotelian* assumptions.

It is important to be clear about the status of these assumptions. There are two points to make. First, I do not mean to claim that Leibniz was committed to *exactly* these propositions as formulated. Except for the Principle of Sufficient Reason, he (almost) never explicitly asserts either these or equivalent claims. But his lack of forthrightness should not come as a surprise. I claimed in the Introduction and chapter 1 that he has methodological reasons for not explicitly stating his most fundamental philosophical assumptions and that he intended his reader to discover those assumptions

after the careful consideration of his texts. From a careful analysis of the theological essays of 1668–69, it is clear that Leibniz had a number of philosophical prejudices both about substance and about the relation between substance and substantial features. The assumptions listed here are an attempt to articulate those prejudices. Second, the textual evidence given in this chapter is insufficient by itself to justify the claim that these assumptions constitute Leibniz's most basic beliefs about substance. Although I consider the evidence in the theological essays significant, what is much more important is the way that Leibniz goes on to use these assumptions. Therefore, for the moment, we might think of these as working hypotheses whose confirmation will come when they consistently help to explain both Leibniz's texts and the evolution of his thought. The chapters that follow contain ample proof that these principles do form the core of Leibniz's *Metaphysics of Substance*.

Before turning to the next phase of Leibniz's philosophical development, let's consider some problems that lurk within the assumptions taken as a group. These cluster around a slight tension between the Principle of Causal Self-Sufficiency and the Principle of Sufficient Reason: on the one hand, the Principle of Sufficient Reason demands that there be a sufficient explanation for a feature; on the other, the Principle of Causal Self-Sufficiency claims that a feature cannot be said to belong to a substance unless that explanation lies in the nature of the substance. What this means is that if the Principle of Causal Self-Sufficiency extends only to some features (say, essential ones) and not to others (say, non-essential ones), then the latter cannot strictly be said to belong to or exist in the substance. Take, for example, the stain on Wanda's hand. If the nature of Wanda does not contain the complete *ratio* for the stain, but rather the *ratio* is contained partly in the nature of Wanda and partly in the nature of her morning coffee, then strictly speaking the stain is not a feature *of* Wanda. But if the stain is not strictly a feature of Wanda, then of whom or what *is* it a feature? Another way of putting this is that if the Principle of Causal Self-Sufficiency does not extend to all the features of S, then there are going to be some features which do not strictly belong to any substances at all.

For the sake of simplicity, let's call the claim that the Principle of Causal Self-Sufficiency applies to all features of S the *Complete-Ratio Theory of Substance*. The *Complete Ratio Theory of Substance* claims that the nature of a substance S contains the complete *ratio* for all its states or features, whether essential or non-essential. In this case, following the Substantial Nature Assumption, S would contain the set of necessary and sufficient conditions or the complete *ratio* for those features that strictly belong to it, and moreover the conditions in S would be in theory intelligible. Understood in this way, the *Complete-Ratio Theory of Substance* seems to entail some very significant conclusions. First, if we extend the Principle of Causal Self-Sufficiency to all the states or features of S so that the nature of S constitutes a complete *ratio* for all such features, then something very

like Leibniz's notion of a complete concept seems to follow.⁸⁴ For, since the nature of S contains the necessary and sufficient conditions for all the features of S and since a complete concept is the set of predicates truly attributed of S, the nature of S would contain something very like the complete concept of S. Moreover, since the Complete-*Ratio* Theory of Substance claims that every feature of S is caused by the nature of S, then it would seem to follow that every state or feature of a substance is produced by its nature and therefore that there is no real causal interaction among substances. That is, the Complete-*Ratio* Theory of Substance would seem to entail two significant conclusions: (1) for every feature *f* of a substance S, the cause of *f* is in S; (2) no feature of S is directly caused by the nature of another substance. In short, if we extend the Principle of Causal Self-Sufficiency to all features of a substance and accept the Complete *Ratio* Theory of Substance, then we arrive at two of the three doctrines that are supposed to constitute Preestablished Harmony, namely, the world-apart thesis and the doctrine of spontaneity.⁸⁵ As we will see in the chapters that follow, it took Leibniz several months to decide on how to resolve this tension between the Principle of Sufficient Reason and the Principle of Causal Self-Sufficiency. The result is a Complete-*Ratio* Theory of Substance and a version of parallelism to accompany it.⁸⁶

After writing the theological essays of 1668–69, Leibniz began to piece together the implications of their metaphysical commitments. Not surprisingly, these Aristotelian assumptions play a crucial role in the development of his original conception of substance. It is now time to turn to the letter in which that conception is first fully articulated.

84. For an account of the mature doctrine, see Appendix I.

85. There is some reason to believe that as early as 1668–69, Leibniz applied the Complete-*Ratio* Theory of Substance to non-human substances. This is an extreme conclusion for which I will not argue here. We will have to wait until ch. 6 for the textual evidence to support this claim.

86. For a summary of these doctrines, see Appendix II.

Original conception of substance, 1669

In April 1669, Leibniz wrote a letter to Jakob Thomasius in which he argues at length for the reconciliation of the Aristotelian and the mechanical philosophies and for a conception of substance that would effect that reconciliation. In the same year, he prepared an edition of a text by the sixteenth-century humanist, Mario Nizolio, which he published in early 1670. Leibniz wrote a lengthy introduction to Nizolio's book, *On the True Principles and the True Method of Philosophizing, Against the Pseudo-Philosophers*, of 1553.¹ Both Nizolio's text and Leibniz's introduction discuss the proper way of philosophizing. It is significant that Leibniz attached to his introduction a slightly revised version of his April 1669 letter to Thomasius. The letter thereby became the young man's first published text on a contemporary metaphysical topic.² Both Leibniz's proposal for reconciliation and his argument for it are strikingly odd. He insists that much of mechanical philosophy follows from Aristotelian principles and that Aristotle's physics is explicable in mechanical terms. His argument includes a reformation of Aristotle's notions of substantial form and matter into a mechanical conception of body. Leibniz happily concludes that by such means the mechanical philosophy "can be reconciled with Aristotle's."³

The apparent perversity of Leibniz's position is due to the fact that nothing could be further from the truth. The philosophies proposed by mechanists like Descartes and Gassendi explicitly reject the foundations of the Aristotelian system. Aristotle's conception of individual substance, as a union of matter and an organizing substantial form, stands at the center of his metaphysics. The rest of Aristotle's philosophy assumes this notion.

1. The original Latin title of Nizolio's work is *De Veris Principiis et Vera Ratione Philosophandi contra Pseudophilosophos, libri IV*. Besides the edition of 1670, Leibniz published another edition in 1674 under a slightly different title, *Antibarbarus Philosophicus sive Philosophia Scholasticorum Impugnata, libris IV de veris principiis, et vera ratione philosophandi, contra pseudophilosophos*. See VI ii 398, 694. Scholars have sometimes conflated the two titles; see, e.g., L 130, n. 1; Aiton, *Leibniz: A Biography*, 30; Brown, "Leibniz: Modern, Scholastic, or Renaissance Philosopher?," 218, n. 10. There is a translation of part of Leibniz's introduction at L: 121–130.
2. In earlier works like *On the Combinatorial Art*, Leibniz had discussed metaphysical topics and offered some suggestions about the proper elements of metaphysics (see VI i 170ff), but the published letter to Thomasius constitutes his first attempt to offer a fully articulated and original theory of substance.
3. VI ii 435: L 95. The letter that Leibniz sent to Thomasius is found at II i 14–24; the published version is at VI ii 433–44. I refer to the latter in this chapter.

Therefore, when Descartes, Gassendi, and many other mechanical philosophers reject Aristotle's account of substance and insist that all corporeal features can be explained wholly in terms of the motion of extended stuff, they discard the very foundations of the Aristotelian philosophy.

Commentators have generally offered one of two explanations for Leibniz's position: they have maintained either that the young man was disingenuous in his proclamations of the virtue of Aristotle's philosophy, or that he was woefully misinformed about the ancient thought. I argued in chapter 1 that Leibniz was a conciliatory eclectic whose goal was to construct a true metaphysics out of the dominant philosophical schools, and I claimed that by the late 1660s he had hit upon the core features of his *Metaphysics of Substance*. In chapter 2, I uncovered Leibniz's Aristotelian assumptions and maintained that these represent his interpretation of Aristotle's conception of substance. In this chapter I will discuss the April 1669 letter to Thomasius in which the methodology and early metaphysics brilliantly converge and in which Leibniz articulates his original conception of substance. Before turning to the letter itself, however, we will need to do a bit more history. Leibniz's philosophical proposals to Thomasius are best understood in their proper intellectual context.

1. Reformed philosophy

Scholasticism had not been long established before philosophers began to distinguish between the thought of Aristotle and that of his dim-witted followers. From the time of Francesco Petrarch (1304–74), many insisted that the claims of the ancient were superior to those of the uncomprehending schoolmen, and that the Aristotelianism of the scholastics was not the philosophy of Aristotle himself.⁴ During the Renaissance and early modern period, humanist Aristotelianisms multiplied at a rapid rate. One can hardly overemphasize the variety of uses to which the ancient thought was put.⁵ For example, in his *De Intellectu*, the Italian Aristotelian, Agostino Nifo (1469/70–1538), forged a complicated synthesis of Aristotelian, Platonist,

4. See Petrarch's *On His Own Ignorance* in *The Renaissance Philosophy of Man*, eds. Ernst Cassirer, Paul O. Kristeller, and John H. Randall, 53f, 77, and esp. 136f.

5. Historians of science and philosophy have begun to document the complicated history of Renaissance Aristotelianism. For some of the standard literature on the topic, see John H. Randall, *The School of Padua and the Emergence of Modern Science*; Ingemar Düring, "The Impact of Aristotle's Scientific Ideas in the Middle Ages and at the Beginning of the Scientific Revolution"; and Schmitt, *The Aristotelian Tradition and Renaissance Universities; Aristotle and the Renaissance; John Case and Aristotelianism in Renaissance England*; "Towards a Reassessment of Renaissance Aristotelianism," and *Critical Survey and Bibliography of Studies on Renaissance Aristotelianism*. Some of the more helpful recent literature, which contains citations to other work, includes: Copenhaver and Schmitt, *Renaissance Philosophy*, ch. 2; Schmitt, Quentin Skinner, and Eckhard Kessler, *The Cambridge History of Renaissance Philosophy*, passim; Menn, "The Intellectual Setting," 41–53; Roger Ariew and Alan Gabbey, "The Scholastic Background;" and Garber and Ayers, *The Cambridge History of Seventeenth-Century Philosophy*, passim.

and Christian doctrines in an attempt to argue that the immortality of the soul could be defended on grounds both of Christian revelation and philosophical demonstration;⁶ and the Cambridge Aristotelian, Everard Digby (1550–1606) proposed in his *Theoria Analytica* of 1579 a combination of Platonist, kabbalistic, Hermetic, and occult ideas within a generally Aristotelian framework. According to eclectics like Everard Digby, the goal was “to save” the truth in Aristotle while adding to it.⁷

In the Protestant Germany in which Leibniz grew up, the thought of Aristotle was combined with a number of philosophical and theological doctrines. Due to the anti-Aristotelianism of Luther and the early reformers, the scholastic philosophy of the universities had to be radically reformed. The important sixteenth-century educational reformer, Philipp Melancthon (1497–1560), managed to forge a synthesis of the writings of Aristotle and the teachings of Luther by carefully selecting the bits of Aristotle’s writings that did not directly confront Lutheran theology. The result was an educational program in which theology had replaced metaphysics as the central point of focus. By the early seventeenth century, however, the *Metaphysics* had resurfaced, and more serious attempts were being made to construct a coherent metaphysical system that also conformed to Protestant theology.⁸ Leibniz echoes this tradition when he writes to Johann Friedrich in a letter quoted in chapter 2: “We must push metaphysics further than has been done so far, in order to have the true notions of God and the soul, of person, substance, and accidents.”⁹

In the first half of the seventeenth century, the intellectuals of Europe were also confronted with the new natural philosophies of Galileo, Descartes, and Gassendi. By the middle of the century, there had evolved a group of eclectics whose members sometimes referred to themselves as the “reformers [reformatores]” and their philosophy as “reformed philosophy [philosophia reformata or philosophia emendata].” For Leibniz, any thinker who articulated a desire to accommodate the new mechanical physics within some version of Aristotelian metaphysics was a reformed philosopher.¹⁰ Re-

6. Nifo, *De Intellectu*, I.I.10. 7. Everard Digby, *Theoria Analytica*, 48.

8. For the relation between Aristotelianism and Protestantism in Germany, see standard works such as Wundt, *Die deutsche Schulmetaphysik*, and *Die Philosophie an der Universität Jena*; Petersen, *Geschichte*; Josef Bohatec, *Die cartesianische Scholastik in der Philosophie und reformierten Dogmatik des 17. Jahrhunderts*; Ernst Lewalter, *Spanisch-Jesuitische und Deutsch-Lutherische Metaphysik des 17. Jahrhunderts*. For more recent studies, see Beck, *Early German Philosophy*, passim; Jill Krayer, “Moral Philosophy,” esp. 342–48; Charles Lohr, “Metaphysics,” esp. 620–38; and Leinsle, *Reformversuche*, passim.

9. II i 489; L 260.

10. The term ‘reformatata’ and its cognates were put to a variety of important uses in the early modern period. Although in the sixteenth century, the term was employed by various branches of the Protestant movement to refer to their churches, it came to be used in the seventeenth century to distinguish the Calvinists and their ‘Reformed Church’ from the Lutherans. Despite its association with the Calvinists in the seventeenth century, the term retained its original sense in non-religious contexts. For example, although Leibniz was a Lutheran, he was happy to describe himself and other non-Calvinists as “reformed philosophers.” For his use of the term, see sect. 2. However, it is important to be clear

formers had very different recipes for mixing the old with the new, but they all intended to combine some part of the mechanical physics with Aristotelian metaphysics. Each was prepared to say that when the Aristotelian philosophy was properly understood, it could comfortably accommodate the mechanical philosophy.

The reformers are best understood in the context of Renaissance humanism and eclectic Aristotelianism, with the additional variable of the new mechanical philosophy. Like the early humanists, they were inclined to look at the ancient himself, to distinguish him from his scholastic followers, and to combine Aristotelian ideas with those of other traditions. But, unlike their predecessors, they had had time to digest fully the new proposals in physics and to face squarely the abundance of ever new discoveries (e.g., sun spots) that often seemed to contradict their cherished Aristotle. Many seventeenth-century intellectuals had turned to the new philosophy¹¹ because they were displeased with the scholastic natural philosophy of the schools and because the new discoveries did seem to argue against Aristotelian principles.¹² But this alternative was considered too extreme by others. For many seventeenth-century thinkers, mechanism was not only a first step towards atheism, it was unacceptable just because of its total rejection of the traditional philosophy.¹³ They maintained that the Aristotelian philosophy did not need to be rejected, it just needed to be reformed. In typical hu-

about the fact that some of the thinkers whom Leibniz called reformed philosophers and whom I discuss later did not use this terminology to refer to themselves. For Catholics like Kenelm Digby, for example, the designation surely would have smacked too much of Protestantism.

11. In the Renaissance and early modern period, there was a wide range of philosophical options that were called 'new.' Until the mid-seventeenth century, the standard distinction was between the ancient and the new (where the latter could be a revision of something ancient). The budding philosopher could choose between the new skepticism, new mysticism, new Epicureanism, the new science of Paracelsus, and so on. For discussions of this point, see Allen Debus, *Man and Nature in the Renaissance* and Menn, "The Intellectual Setting." It is important to recognize that, as Menn puts it: "By the early seventeenth century, there were far too many new philosophies available: the problem was to find a single good one" (69). The mechanical philosophies of Galileo, Descartes, Gassendi, Hobbes, and Digby solved this problem so that, by the mid-century, the designation 'new philosophy' had become identified with mechanism.
12. For a discussion of scholastic education in seventeenth-century universities, see L.W.B. Brockliss, *French Higher Education in the Seventeenth and Eighteenth Centuries*, and "Aristotle, Descartes, and the New Science: Natural Philosophy at the University of Paris, 1600–1740;" Schmitt, "The Rise of the Philosophical Textbook;" John A. Trentman, "Scholasticism in the Seventeenth Century;" Patricia Reif, "The Textbook Tradition in Natural Philosophy, 1600–1650," and Garber and Ayers, *The Cambridge History of Seventeenth-Century Philosophy*, esp. Part I.
13. The desire on the part of many philosophers, even those who accepted the mechanical philosophy, to retain as much as possible of the tradition was quite strong. See Theo Verbeek, *Descartes and the Dutch: Early Reactions to Cartesian Philosophy, 1637–1650*, for several examples of Cartesians who were not prepared to start "from nothing" as Descartes himself proposed, but rather hoped to prove their affiliation with traditional philosophy. Although some were politically motivated, most were sincere.

manist fashion, the need to reform Aristotle often took on a moral tone with suggestions that the teachings of the master must be purified of the degradations to which they had been submitted by his unfaithful and uncomprehending followers.¹⁴ Thus, at the very time that philosophers like Descartes and Gassendi were crying for the demise of the Aristotelian philosophy, others were calling for its transformation.

By the middle of the century, there were many Aristotelians who were perfectly capable of accepting the new developments in natural philosophy and conforming Aristotelian ideas to them.¹⁵ Not surprisingly, the number of new ideas added to the traditional mixture depended greatly on whether or not there was an advocate of the new ideas in that intellectual community. The well-known English Catholic, Kenelm Digby, argued in 1644 that the new mechanical philosophy was consistent with Aristotle.¹⁶ In Paris, the Aristotelian professors at the University of Paris began in the 1640s to absorb contemporary developments in natural philosophy, and eventually revised or even rejected some of the explanatory theories of Aristotle. According to one scholar, the degree to which the professors took the Cartesian principles seriously was directly related to the popularity of that philosophy in Paris: when the professors first began to include Cartesian doctrines in their lectures (in the 1660s), Cartesianism had found its way into the Parisian salons and the Peripatetics had become targets of ridicule.¹⁷ In Leiden, lectures were given on the Cartesian philosophy in the 1640s and, after a number of intellectual skirmishes, philosophers like Johannes de Raey had managed to mix their traditional philosophy with large

14. For Leibniz's most explicit comments on this, see the preface to his edition of Nizolio's *De Veris Principiis*, esp. VI ii 414-427: L 124-128. Like Leibniz, most seventeenth-century philosophers distinguished not just between Aristotle and the scholastics, but also between the good and bad scholastics. For the importance of these distinctions, see Christia Mercer, "The Vitality and Importance of Early Modern Aristotelianism," 41-44.
15. Recent historians of science and philosophy have begun to acknowledge the progressive elements in early modern Aristotelianism and the important role that the Aristotelian philosophy played in the development of modern science. For recent studies and for citations to the relevant literature, see Mercer, "The Vitality and Importance of Early Modern Aristotelianism;" Des Chene, *Physiologia*, passim; Ariew and Gabbey, "The Scholastic Background;" Cees Leijenhorst, *Hobbes and the Aristotelians: The Aristotelian Setting of Thomas Hobbes' Natural Philosophy*; and Garber and Ayers, *The Cambridge History of Seventeenth-Century Philosophy*, passim.
16. Digby, *Two Treatises*, esp. 341-46.
17. See Brockliss, "Aristotle, Descartes, and the New Science," 66ff, esp. n. 126. According to Brockliss, from the 1640s, the Aristotelian professors at the University of Paris "began to adjust or even reject certain of Aristotle's explanatory theories in light of contemporary developments." Although they "refused to countenance the principles of mechanical philosophy," they did respond to some of the challenges posed by the new experiments and observations talked about in Paris at the time (e.g., in chemistry). Brockliss explains that after the 1640s the courses in physics "began to display an increasing interest in the observational and experimental work of contemporaries" (38-43). For this part of the history of Cartesianism, see Francisque Bouillier, *Histoire de la philosophie cartésienne*, Vol. I, 429-446.

doses of Cartesianism. As one scholar notes, in Leiden and Utrecht, “Cartesianism was almost normal as early as 1650.”¹⁸

In the area of natural philosophy, the situation was more conservative in Germany in the middle of the century. The havoc and devastation wrought by the Thirty Years War, fought mostly on German soil, helped to stunt the growth of the new mechanical philosophy in Germany.¹⁹ So did the fact that the Germans lacked an intellectual center around which philosophical liberals could rally. Whereas England had the Royal Society, and France had the Academy of Science, Germany had no scientific society. Besides Leibniz tucked away at the Hanover court for most of his life, Germany had no internationally prominent advocate of modern ideas in the whole second half of the century, and it had no scientific society until 1700, when Leibniz’s plans for a Society of Science in Berlin were finally approved.²⁰ As Leibniz himself notes in 1670, “scholasticism is more firmly established in Germany” than in the other northern countries.²¹

But despite the philosophical conservatism in Germany in the 1660s, there were reformed philosophers who intended to combine elements from Aristotle’s philosophy with those of the moderns. A case in point is Erhard Weigel, who, besides Thomasius, was Leibniz’s most influential teacher. I outlined Weigel’s conciliatory proposals in chapter 1; now I turn to his reformed philosophy, which was almost certainly the first fully articulated reformed Aristotelianism that Leibniz studied. Weigel intends to apply the mathematical method to all the parts of philosophy, and thereby to construct a single coherent system. In the preface of his *Analysis Aristotelica ex Euclide Restituta* of 1658, he asserts that once the philosophy of Aristotle is properly understood, the new philosophy and its mathematical method will be reconciled with it and the truths in the philosophy of Gassendi and Descartes will be placed on Aristotelian foundations.

18. Verbeek, *Descartes and the Dutch*, 82. Verbeek documents the ascendancy of the new philosophy among Dutch philosophers. See esp. 11, 70–76, 81–82.

19. See Petersen, *Geschichte* as the standard text on the topic. Petersen also asserts that Leibniz, because of his interest in the new philosophy, was a true anomaly in Germany and that it was only in the time of Kant that Germans developed a philosophy that came to terms with modern science (340–41). More recent studies take a similar position on modernism in early modern Germany. See Beck, *Early German Philosophy*, esp. chs. 6–10; Leinsle, *Reformversuche*, esp. chs. 3–5. It is surely correct that the Thirty Years War, which ended in 1648, disrupted intellectual activities. A striking example is that philosophy teaching at the important university in Herborn was disrupted in the 1620s and leading figures (e.g., Johann H. Alsted) were dispersed throughout Europe. It is also true that the mechanical philosophy was not an immediate success in Germany. However, there were many ways of being innovative in the seventeenth century. While the vast majority of Leibniz’s German predecessors did not endorse the mechanical physics, they did engage in other innovative projects. I discuss these and other topics in a work in progress, *‘Divine Madness:’ Metaphysics, Method, and Mind in Seventeenth-Century Continental Philosophy*.

20. For a brief discussion of the Berlin society, Leibniz’s role in its evolution, and his plans for other scientific societies, see Aiton, *Leibniz: A Biography*, 215, 221, 251–255.

21. VI ii 414; L 125.

Of special interest to us now is the means by which Weigel attempts to effect this reconciliation. For Weigel, it rests on a transformation of key Aristotelian notions. According to Weigel, all "natural things" are constituted by two principles – "one is called Matter, the other Form." The former, "what Aristotle called prime matter," consists in extension that has "parts outside of parts" so that it "coincides with space;" as such, it is both indeterminate and purely potential. Form, on the other hand, is produced by motion and is the "substantial determination" of extension.²² In other words, form is a determination of matter and, as such, is the source of corporeal features. God is the cause of motion in that he is "the first cause of all things." By such means, Weigel thinks he has clarified the meaning of the Aristotelian first principles.²³ As we will see in the next section, Leibniz's interpretation of Aristotle's fundamental principles bears a striking similarity to Weigel's.

Leibniz expresses a keen interest in other reformers, most particularly Kenelm Digby, Jean-Baptiste du Hamel, and Johannes de Raey. Now that I have defined reformed philosophy as a philosophical alternative, and mentioned the German exemplar that had the greatest influence on the young Leibniz, I would like to describe the most basic ideas of these three philosophers. Their views are worth noting not only because Leibniz read and seriously considered their works, but also because they bear witness to the fact that there was a clearly delineated alternative in England, France, and the Netherlands to both mechanism and the more traditional sort of Aristotelianism.

Jean-Baptiste du Hamel was a well-known Parisian philosopher and textbook writer who published a number of books on natural philosophy. About one of them, Leibniz writes in 1669: "in it he brilliantly explains the hypotheses of some of the best-known ancient and recent thinkers and often criticizes them with discernment."²⁴ Although du Hamel adhered firmly to Aristotelian principles throughout his life, he did take the new philosophy seriously. The title of one of his better known texts nicely expresses his attitude: *De Consensu Veteris et Novae Philosophiae* (originally published in 1663). In his various books, du Hamel considers the principles of mechanism and asks how they can help to explain the physical world.²⁵ In the preface to one of his scientific works, he expresses the extent of his open-mindedness. He writes that there is much to learn both from the new and the ancient systems, that the condemnation of any philosophical sect is the result of "limited ambitions," and that "the proper philosophy" will result from the free use and consideration of the best philosophical schools.²⁶ Al-

22. Weigel, *Analysis*, 193–194. 23. Weigel, *Analysis*, 194.

24. II i 15; L 94. Johann C. Sturm also speaks well of du Hamel. See his *Philosophia Electica*, 109, 181, 188.

25. My discussion of Jean-Baptiste du Hamel is based on his *Philosophia Vetus et Nova ad Usum Scholae Accommodata; Astronomia Physica, De Meteoris et Fossilibus Libri Duo*; and *De Consensu Veteris et Novae Philosophiae*.

26. *Astronomia Physica*, Praefatio.

though du Hamel invariably gives priority to Aristotle, he does take seriously the ideas of the “moderns [recentiores].” He often presents the doctrines of Gassendi and Descartes and is happy to acknowledge the usefulness of “the principles of mechanics.” For instance, du Hamel goes into detail about how Descartes’ views about fire can help us to understand its nature better.²⁷ Du Hamel insists, however, that these mechanical explanations can only go so far: because they do not “convey the metaphysical principles beneath,” we must turn to Aristotle for the ultimate cause of things. Natural bodies are constituted of matter and substantial form, traditionally understood, and their corporeal features ultimately have to be explained in such terms. In other words, for du Hamel, the old philosophy offers the *ratio* that illuminates the new observations; the new observations thereby confirm the traditional doctrines. While the new philosophy helps to explain the phenomena, the underlying principles of nature are Aristotelian.²⁸

Another reformed philosopher who was internationally well-known and much respected by Leibniz is Kenelm Digby. Digby was an English Catholic, an original member of the Royal Society, and one of the first philosophers to produce a fully developed system of mechanical philosophy. His most important publication includes a treatise on the nature of body and one on the immortality of the soul. These were published together in 1644 and offer an extended argument for the immortality of the soul based on an exhaustive account of the nature of bodies and their properties. Digby interweaves principles from a variety of philosophical positions. He is explicit about his high esteem for Aristotle and his unmitigated scorn for the scholastics. In fact, he uses principles of the former to argue against the latter and is quite explicit about the fact that his discourses “are built upon the same foundations” as the Philosopher. He describes the latter as “the greatest Logician, Metaphysician and universal scholar . . . that ever lived. . . . [His] name must never be mentioned among scholars, but with reverence, for his unparalleled worth; and with gratitude for the large stock of knowledge he hath enriched us with.”²⁹

Digby is equally explicit about the fact that we must inform Aristotelian principles with the new discoveries if we are to attain a true science of nature. He produces a complicated amalgamation of atomic, mechanical, and Aristotelian ideas. The key to his reconciliation of the ancient and the modern systems is a transformation of Aristotle’s four elements. According to Digby, “the proper notions of the four elements” are “the notions of Quan-

27. Du Hamel, *De Consensu Veteris et Novae Philosophiae*, 714–18.

28. As he writes in the preface of *Philosophia Vetus et Nova*: “Ratio experientiam et observationes illuminat . . . Sed usus et experimenta doctrinam confirmant.”

29. Digby, *Two Treatises*, 346. Leibniz thought highly of Digby’s *Two Treatises* whose Latin translation of 1655 he cites often. See, e.g., VI ii 246 and 426. In the latter passage, Leibniz lists three contemporary philosophers whom he says have correctly shown the importance of Aristotle’s philosophy: Thomas White, Johannes De Raey, and Digby. Interestingly, Leibniz also places Digby among the corpuscularians. See, e.g., VI i 489.

tity.”³⁰ Thus, he first analyzes each of the elements in terms of rarity and density, then applies to them the principles of force and velocity, and finally “deduces” from them the principles “which governeth Mechanics.”³¹ For Digby, all sensible qualities are to be explained by the varied proportions of rarity and density. The details of Digby’s account are complicated and need not concern us here. What is important is that he manages to retain Aristotelian terminology (e.g., of substance, matter, and the four elements) while transforming the Aristotelian content. He acknowledges his departure from Aristotle on a “few points,” but insists that he follows in the steps of that “great oracle of nature” and that “the way we take is directly the same solid way, which Aristotle walked in before us.” According to Digby, his fundamental principles are Aristotle’s: “all the difference between us is, that we enlarge ourselves to more particulars than he hath done.”³²

The final reformed philosopher to discuss here is the Dutch philosopher, Johannes de Raey (1622–1707), who was responsible for the conversion of many thinkers to Cartesianism and who is probably Leibniz’s favorite reformer. In an early letter to Thomasius, Leibniz writes that in the same way that Thomasius had saved Aristotle “from scholastic smoke,” so De Raey in his *Clavis Philosophiae Naturalis Aristotelico-Cartesiana* “shows . . . that Aristotle wonderfully conforms to [the philosophy of] Galileo, Bacon, Gassendi, Hobbes, Descartes, and Digby.”³³ Nor was Leibniz unusual in his reaction to the *Clavis*: the text was widely read and highly praised. According to Johann Christoph Sturm, for example, De Raey is “most learned” and the doctrines of his *Clavis* “most acute.” Thomasius, however, does not agree: he criticizes his student for having been too taken by the philosophical opinions of De Raey.³⁴

For our purposes, De Raey’s Dedicatory Letter of his *Clavis* is especially interesting. According to De Raey, after the Europeans “lost the works of Aristotle,” their understanding of him was due entirely to the translations and commentaries imported from the “Arab world.” Because the Arabs (and especially Averroës) misunderstood Aristotle and because (at that time) “the Greek language was lost” to Europeans who therefore could not consider

30. Digby, *Two Treatises*, 30. 31. Digby, *Two Treatises*, 66.

32. Digby, *Two Treatises*, 343.

33. II i 10. It is clear that Leibniz thought of De Raey as a reformer, but it is doubtful that De Raey ever described himself in this way. According to Verbeek in his *Descartes and the Dutch*, De Raey “stands out as the leader of the Dutch Cartesians” (87). But Verbeek also notes both that De Raey is sincere in his attempt to integrate the Cartesian philosophy “into the philosophic tradition” (72) and that “De Raey’s most significant insight, in his own view, is the discovery of the profound similarity of the philosophies of Aristotle and Descartes” (8). From the discussion that follows, it will become clear that De Raey’s Cartesianism is steeped in Aristotelian ideas. Leibniz seems justified in categorizing him as a reformed philosopher.

34. See *Philosophia Eclectica*, 75–76. As noted in ch. 1, sect. 3, Jakob Thomasius rejected the mechanical philosophy. Therefore, it comes as no surprise that he does not praise the philosophical opinions of De Raey and criticizes Leibniz for his interest in that philosophy. See II i 12.

“the true Greek codex,” the latter unwittingly accepted these bad translations and interpretations. By such means, according to De Raey, Aristotle’s philosophy became lost behind the “most perverse and corrupt words of the Arabs.” Not only did this general misunderstanding of Aristotle continue among the scholastics, the prejudice against him continued even after the ancient philosophy “was brought to light” and “the thought of Plato, Cicero, Plutarch, Seneca, and similar authors” was rediscovered. Even now, many philosophers reject Aristotelian philosophy without knowing Aristotle’s real views. According to De Raey, the great importance of Cartesian philosophy is that it reveals the true meaning of Aristotle’s principles. De Raey concludes his Dedicatory Letter by saying that in his book, he will uncover the real views of the ancient and show that they are both consistent with Cartesian philosophy and quite unlike what the scholastics have claimed.

The most fascinating feature of De Raey’s Dedicatory Letter is that he not only claims that the scholastics and others have misconstrued the real nature of Aristotle’s philosophy, he also presents a clear explanation of how such a general misinterpretation came about and why it is now possible to discover Aristotle’s real meaning.³⁵ However incompatible modern mechanism and Aristotelian physics may seem, the incompatibility is only apparent, an unfortunate result of an historical accident. In order to discover the correspondence between the Cartesian and Aristotelian philosophies, all one has to do, De Raey suggests, is to penetrate through the layers of misinterpretations to the real philosophy of Aristotle. Not surprisingly, De Raey thinks that he has accomplished this task. De Raey’s method in the remainder of his book is to describe what “the schoolmen” say about a crucial element in Aristotle’s philosophy (e.g., substance, substantial form, matter), to quote Aristotle (rendered in Latin) on the topic, and then to explain what Aristotle really meant. De Raey’s chapter on substantial form, entitled “On Substantial Form and the Soul of Man, according to Aristotle, against the Aristotelians,” offers a significant example. He argues there that the original notion of substantial form is quite different than it has generally been taken to be. According to De Raey, a substantial form is what is essential, that is, it is something that can act as the *ratio* or essence of a thing, and, therefore, a substance is simply a thing that has an essence. Since matter has an essence, it follows that matter is a substance.³⁶ In other chapters of his *Clavis*, De Raey treats related doctrines of Aristotle in a similar way: he be-

35. I said in ch. 1, sect. 2 that Renaissance and early modern thinkers (reasonably) felt the need to explain why the truth in ancient philosophy was available to them in a way that it had not been to earlier generations, and I said that the explanations often focused on their newly developed insights and tools. As early as Petrarch, we find thinkers blaming “the Arabs” for the misunderstanding of the philosophy of Aristotle in the Latin west. For Petrarch and other humanists, it was their philological tools that helped them excavate the real Aristotle. See, e.g., Petrarch, *On His Own Ignorance*, 140–43. According to De Raey, it is the Cartesian philosophy that allows him to regain the proper understanding of the ancient’s thought.

36. De Raey, *Clavis*, 473–475.

gins with a lucid and accurate account of an important Aristotelian notion and then uses it to argue for a position unlike anything accepted by the ancient. Concerning the chapter just noted, for example, while it may be true that a substantial form is most basically an essence, that a substance is by definition that which has an essence, and even (for some scholastics) that matter has an essence, it by no means follows that matter is itself a substance.³⁷ It is important to emphasize, however, that De Raey does manage to construe intelligently and then put to interesting use genuine elements of Aristotle's metaphysics in his attempt to reconcile the ancient's thought with Cartesian mechanism.

In presenting the views of these reformed philosophers, I have hoped to display both the range of alternatives that Leibniz actually faced during his youth and the complicated nature of some of the proposed reforms. This should help us to understand and evaluate Leibniz's own ideas about reconciliation. Each of these philosophers is wedded to the thought of Aristotle, but they differ concerning the degree to which that philosophy represented the truth and the extent to which they were prepared to reinterpret his ideas. Leibniz has something in common with each of them. Like du Hamel, he thought that the new mechanical philosophy should help to illuminate and support the ancient truths and, like Weigel, he believed that mathematics was the key to understanding natural phenomena. Like Digby, he was prepared to reinterpret Aristotle's doctrines in order to accommodate the new findings and the new physical model. But he has most in common with Weigel and De Raey in that he believes that the new philosophy helps to illuminate the real sophistication of the philosophy of Aristotle. Whereas Digby often seems more wedded to Aristotelian terminology than to the philosophical doctrines that lay behind it and du Hamel does not attempt a full integration of the two, Weigel and De Raey are committed to preserving key elements of Aristotle's metaphysics while constructing their synthesis of ancient and modern ideas. The details of Leibniz's philosophical synthesis differ from the proposals of Weigel and De Raey, but he shares both the enthusiasm and subtlety of these more thorough reformers.

2. Letter to Thomasius

In 1669, while writing his introduction to an edition of a Renaissance text on the proper way of doing philosophy, Leibniz chose to attach to it a revised version of his April 1669 letter to Thomasius. Leibniz was thereby

37. The schoolmen disagreed as to whether matter had its own essence and hence whether or not it could exist without form. Let me offer some highlights relevant to Leibniz: Aquinas thought matter was pure potency, and could not exist without form (*Summa Theologiae*, I, q. 66, art. 1); Scotus thought matter had a reality distinct from form and could exist without it (*Opus Oxoniense*, II, disp. 12, q. 1); and Eustachius agreed with Scotus but added a few thoughts of his own (*Summa Philosophiae Quadripartita, Physica*, Book I, disp. 2, q. 9). For those seventeenth-century philosophers who wanted to make Aristotle more compatible with the new natural philosophy, the position of scholastics like Scotus and

doing something significant: he was announcing his own views about what philosophy is and what it should be. Nor does the letter to Thomasius disappoint. It offers the key to Leibniz's original metaphysics and eclectic methodology, it sets the stage for his later philosophical investigations, and it reveals the first significant articulation of the results of his Rosental decision. It is significant that when Leibniz attached the letter to his introduction of the Nizolio text, he gave it the title "Letter to a man of the most refined learning concerning the reconcilability of Aristotle and the moderns [recentioribus]." ³⁸ The text is obscure and worth working through in some detail. ³⁹

Leibniz's letter may be divided into three parts of increasing specificity: in the first, he draws a rough sketch of the contemporary philosophical and methodological terrain and indicates where on the proposed map he stands; in the second, he presents an argument for the particular methodological strategy he accepts; and then, in the third, he explicates the metaphysical conclusion that he thinks that strategy produces, namely, his theory of substance. I will treat each of these in turn.

Goal and strategy

Leibniz begins his letter by congratulating Thomasius on his *Origines historiae philosophicae et ecclesiasticae*, the second edition of which appeared in 1669. ⁴⁰ As noted in chapter 1, Thomasius's book is an extremely concise discussion of the origins of certain philosophical and ecclesiastical doctrines in which he attempts to trace present opinions back to their ancient origins.

Eustachius was far more attractive than of Aquinas. For a discussion of the scholastic background to early modern natural philosophy and for references to other literature, see Ariew and Gabbey, "The Scholastic Background," esp. 425–34.

38. Nizolio is one of the anti-Aristotelian humanists who (like Peter Ramus) wanted to reform logic teaching and to replace scholastic logic with a form of rhetoric. For a brief account of Nizolio and references to secondary literature, see Copenhaver and Schmitt, *Renaissance Philosophy*, 207–09; and Schmitt, Skinner, and Kessler, *The Cambridge History of Renaissance Philosophy*, 207. For a helpful discussion of the relationship between the thought of Leibniz and Nizolio, see V. Waldemar, "Leibniz, Nizolius, et le nominalisme moderne," 151–56.
39. In the scholarly literature to date, there is no systematic analysis of the complicated argument in the letter to Thomasius, and so the sophisticated nature of Leibniz's *Metaphysics of Substance* has not been recognized. For the fullest accounts, see Moll, *Der junge Leibniz*, vol. 2, passim; and Beeley, *Kontinuität*, ch. 6. In Beeley's short chapter on the letter, he offers some nice details about Leibniz's employment of mechanical principles, but claims that the point of the letter is to convince Thomasius of "the truth of mechanism" (121). According to Beeley, "Leibniz's letter to Thomasius of 30 April 1669 served to assert mechanism against scholasticism more than to expound his own point of view – simply because he did not have one at that time" (134). Also see Brown, "Leibniz: Modern, Scholastic, or Renaissance Philosopher?," 213–30, esp. 217ff; Wilson, *Leibniz's Metaphysics*, 47ff; Robinet, *Architectonique disjonctive*, 128f; Belaval, *Initiation*, 63ff; Hannequin, "La première philosophie," 41ff; and Kabitz, *Die Philosophie des jungen Leibniz*, 60ff.
40. Thomasius' book was popular enough to go into a third edition in 1699. References are to that edition.

Leibniz congratulates his teacher for offering a "history of philosophy," and adds: "I wish, indeed, that you would produce both a style and mode of expression [stilum filumque] for this new age and warn our unseasoned youth that it is wrong to give our moderns [novatores] credit either for everything or for nothing." Leibniz then lists a number of philosophers "among whom the mantle of philosophy is torn apart," and tells Thomasius that it "will be play for you, but fruitful for the public, to warn the world about them."⁴¹

This introductory paragraph is important because it presents the proper context in which to see the letter. Leibniz makes three requests of Thomasius, each of which is supposed to fulfill a need of this "new age" and each of which Leibniz *himself* goes on to satisfy. First, Thomasius is supposed to warn the naive youth against taking the innovators (*novatores*) to be either wholly right or wrong. According to Leibniz, while the new natural philosophers offer much that is important, they do not offer the whole truth. It is ironic that Leibniz makes this request of Thomasius: Leibniz knew perfectly well that his esteemed teacher had contempt for the "new philosophers"⁴² and would never have taken up this first request. But if the teacher could not rise to the occasion, then the student surely would.

Second, Leibniz asks his teacher to caution the public about the tearing apart of philosophy by recent philosophers. Interestingly enough, Leibniz's examples of philosophers who are sundering philosophy include Aristotelian philosophers (Sennert and Sperling), humanists (Nizolio), and the whole range of natural philosophers and mechanists (from Campanella, Galileo, and Telesio to Hobbes, Gassendi, Digby, and Descartes). In short, the people on Leibniz's list have nothing in common except the fact that they are all fairly recent authors who have expressed their own philosophical opinions. But that is surely the point: what Leibniz proposes here is that these intellectuals are destroying philosophy in that each chooses to argue for his own position without proper regard for the views of others. The unfortunate result of their approach, Leibniz suggests, is a wide variety of divergent views that have little or nothing to do with one another. In the letter to Thomasius, Leibniz suggests that such free thinkers are destroying the "seamless mantle" of philosophy. This, and the related claim that the new philosophy is neither wholly right nor wholly wrong, is an implicit advertisement for Leibniz's style of conciliatory eclecticism. Instead of arguing for such a variety of incompatible views, Leibniz would have his contemporaries seek a compromise among the conflicting sects. Leibniz's metaphor of the "mantle of philosophy" that is being "torn apart" also makes a subtle, though powerful point. The image here echoes the Biblical account of the "seamless mantle" of Jesus, which was not torn into parts by those dividing up his possessions after his death (John 19:23). Among other things, the mantle became a metaphor of the singleness and wholeness of Christianity. Leibniz is making significant use of this powerful image: the clear implication is that philosophy ought to be similarly undivided. That

41. VI ii 433; L 93. 42. II i 13.

Leibniz intends to construct a harmonized, seamless philosophy is clear from what follows.

Leibniz's third request of Thomasius is to create "a style and mode of expression" to suit this new age. Leibniz suggests that his teacher is particularly well suited for this task because he, unlike other humanists, is capable of presenting the "profound reasons for the interconnections among doctrines." The implication is that the new age needs a style that is different from the one used by the majority of Leibniz's contemporaries, and that someone like Thomasius ought to create one. In his preface, Leibniz had described Thomasius as "the most celebrated peripatetic in Germany" and one who has "the most accurate understanding of philosophy" as well as the "most exquisite" erudition.⁴³ The clear suggestion is that it will take someone who has a profound understanding of Aristotelian thought in particular and of the history of philosophy in general to produce the proper style. I propose that Leibniz saw himself as capable of doing this and that in the remainder of his letter he intended to express in the proper conciliatory mode the profound interconnections between the thought of Aristotle and that of the moderns.

The full importance of Leibniz's introductory paragraph becomes evident at this point. By asking Thomasius to fulfill three specific needs of "this new age [*recentiorem hanc aetatum*]," Leibniz implicitly presents his own concerns in the letter. He easily satisfies his first and second requests: to begin his introduction to Nizolio's treatise in this way constitutes a public cry for a conciliatory style of philosophy and a public warning against the sundering of philosophy by the various conflicting sects. By warning his readers against the danger posed by these conflicting philosophers and by suggesting that what is needed is a more conciliatory approach (based on "the interconnections of reasons or principles among doctrines"), Leibniz argues here for the sort of conciliatory eclecticism that he goes on to use. He also thereby presents the correct context in which to see the remainder of his letter. Without proclaiming either his own virtues or the importance of his proposals, he presses upon his reader the great need for the very conciliatory philosophy that he proceeds to offer.

At first glance, it may appear odd that Leibniz presents the goals of his letter in such an indirect way. But when we place Leibniz's explicit desires here against the background of the conciliatory methodology articulated in chapter 1, his hesitancy does not seem so strange: Leibniz does not want to be yet another philosopher "stimulated by the vain lust for novelty"⁴⁴ and pronouncing either his own great insights or the absolute truth of his opinions; rather, he hopes to lead his readers quietly to the "Harmony of these different realms."⁴⁵ The letter is a paradigm of conciliatory rhetoric. Or, in Sturm's words, Leibniz seeks a "modest presentation" of his views.

43. VI ii 426. 44. GM VI 235: L 436. Quoted in ch. 1, sect. 4.

45. G III 607: L 655. Quoted in ch. 1, sect. 4.

Once Leibniz has properly introduced his letter, he distinguishes among the most important contemporary thinkers and explains where he stands among them. He thinks that it is important to note the difference between the Cartesians (whom he says are “those who follow the principles of Descartes”) and other philosophers who “though often confused with Cartesians are not.” In the process, he lets us know where he stands:

As to myself I confess that I am anything but a Cartesian. I maintain the rule which is common to all these innovators [restauratores] of philosophy, [namely that] *nothing ought to be explained in bodies except through magnitude, figure, and motion*. Descartes himself, I hold, merely proposed this rule, for when it came to actual issues, he completely abandoned his strict method and jumped abruptly into certain amazing hypotheses. . . .

Hence I do not hesitate to say that I approve of more things in Aristotle’s books on physics than in the meditations of Descartes; so far am I from being a Cartesian. *In fact, I venture to add that the whole of Aristotle’s eight books can be permitted without violating the reformed philosophy.*⁴⁶

Leibniz could not be clearer. He is an innovator in that he wants to explain corporeal features wholly in terms of magnitude, figure, and motion, although he is not in the Cartesian half of this group because he does not follow the principles of Descartes (unfortunately, he never states which principles he has in mind). It is important that at the outset of his letter, Leibniz distances himself from the Cartesians and from any other particular mechanical sect.⁴⁷ He is not interested in the metaphysical underpinnings that the mechanists offer for their philosophy (and the various debates surrounding them), but only in mechanical explanations of corporeal features. Besides this, he tells us that he is an enthusiastic reformer and believes that Aristotle’s physics can be permitted without violating the reformed philosophy. He goes on to explain a bit more about what his position involves in a passage quoted in chapter 1:

For the most part, Aristotle’s reasoning about matter, form, privation, nature, place, infinity, time and motion is certain and demonstrated. . . . [Except what he said about the impossibility of a vacuum] scarcely any sane person can doubt the rest of Aristotle’s arguments.⁴⁸ Who would disagree, for instance, with his theory of substantial form as that by which the substance of one body differs from that of another? Nothing is truer than his view of primary matter.⁴⁹

46. VI ii 434: L 94. Leibniz’s emphases.

47. He also thereby distances himself slightly from reformers like De Raey who explicitly construct their reconciliation around the philosophy of Descartes.

48. Note that in the first version of this letter, Leibniz states that “no sane person can doubt the rest of the contents of Aristotle’s physics, metaphysics, logic and ethics.” According to Gerhardt, Leibniz crossed out this entire statement in his manuscript (see G IV 164). But the young author obviously changed his mind and decided to leave it, as quoted here, in the version to be published. It is interesting that he was indecisive about whether or not to include this strong statement. Compare the revised version at VI ii 434 and the original at II i 15.

49. VI ii 434: L 94.

Of course, in the second half of the seventeenth century, Leibniz's comment here is an exaggeration. The innovators whom he has just mentioned question exactly these Aristotelian doctrines and do so precisely because they accept the rule Leibniz attributes to them. What could Leibniz possibly have in mind here? He continues:

The one question is whether Aristotle's abstract theories of matter, form, and change should be explained by magnitude, figure, and motion. This is what the Scholastics deny and the Reformers [Reformatores] affirm. The latter opinion seems to me to be not only the truer but also the more in agreement with Aristotle.

Besides the *Recentiores* (all of whom accept the stated rule), there is a group of *Reformatores* who propose to explain Aristotle's most basic physical principles in terms consistent with mechanism. Those principles, as interpreted by the scholastics, cannot be so explained. The pressing question is, therefore, whether the scholastics or the reformers are correct in their interpretation of Aristotle's physical principles. Leibniz thinks that a reformed philosophy can be constructed that would fully "explain" the relevant principles and that such a philosophy would be more in agreement with Aristotle than are the opinions of the scholastics. Leibniz also suggests that were this reformed philosophy to explain successfully Aristotle's abstract theories of matter, form, and change in terms of magnitude, figure, and motion, then most philosophers would accept the resulting Aristotelian views about (say) prime matter. After all, these views would be a synthesis of Aristotelian and mechanical principles and would appeal to the modern philosophers and to the Aristotelians, or so Leibniz seems to believe. Leibniz's intention is to formulate just such a reformed philosophy.

The context that Leibniz sets in the first few paragraphs of his letter is enormously important. He neatly displays his general philosophical concerns and his precise location on the seventeenth-century philosophical map. He acknowledges the humanists (those "skilled in antiquity"); the traditional scholastics (e.g., Scaliger); the mechanists, among whom some are Cartesian and some not; and the reformed philosophers. By placing himself in the latter group, Leibniz tells his readers exactly where he stands within the philosophical alternatives. In these few paragraphs, he also reveals his keen interest in critical eclecticism and the precise form his conciliation would take. The proclamations he makes for a conciliatory method place him squarely within the tradition of Renaissance humanism, while his constant preference for Aristotle and the use he makes of Aristotelian concepts expose him as a reformed philosopher. He will now attempt to argue for this philosophy.

Reformed philosophy

Leibniz introduces the conclusion for which he will argue by asserting that as a variety of philosophers have noted, the scholastics perverted Aristotle's meaning in metaphysics, logic, and law. Leibniz proposes to demonstrate

that the schoolmen did this in physics as well. In other words, he will argue that the reformers and not the scholastics are correct about Aristotle's physics. This, he says, can be done in two ways:

It can be shown either that the Reformed Philosophy can be reconciled with Aristotle's and does not conflict with it or in addition, that the one not only can but must be explained through the other, nay, that the very views which the moderns [recentiores] are putting forth so pompously flow [fluere] from Aristotelian principles. By the former way, the possibility of the reconciliation is confirmed, by the latter, the necessity. But if the reconciliation is shown to be possible, it is by that fact accomplished. Even if the explanation [explicatio] of both Scholastics and moderns [recentiores] were possible, the clearer and more intelligible of two possible hypotheses must always be chosen, and without any doubt this is the hypothesis of the moderns, which conceives no incorporeal entities within bodies but assumes nothing beyond magnitude, figure, and motion.⁵⁰

Leibniz presents here, in his typically terse fashion, the assumptions and structure of his argument. The two crucial issues are, first, whether the scholastics or the reformers interpret Aristotle's physics more properly and, second, whether the physical explanations offered by the scholastics or those offered by the reformers can be shown to be true.

Leibniz's argumentative strategy is clever. In the mid-seventeenth century, the most damaging criticism leveled against the Aristotelians concerned the use of substantial forms in explaining physical phenomena. The ridicule to which the Aristotelians were subjected is well known. It was common for philosophers to claim, as Descartes had, that the schoolmen explain "that which is obscure through that which is more obscure."⁵¹ Leibniz intends to deflect exactly this criticism. If he can show that such complaints do not apply to the ancient thought itself but only to those scholastics who perverted its meaning, then he will have saved Aristotle himself from the flames of ridicule.

According to Leibniz, the scholastics posit the existence of "a kind of immaterial being" that is "insensible" within bodies, namely, substantial form, in terms of which corporeal features are to be explained. But "Aristotle seems nowhere to have imagined any substantial forms" of this kind.⁵² Leibniz explains that because the reformers have properly understood the thought of Aristotle, they deny both the existence and intelligibility of any

50. VI ii 435: L 95.

51. AT III 507. In the *Origin of Forms and Qualities*, Robert Boyle writes: "And indeed the doctrines of forms and qualities . . . are wont to be treated of by scholastical philosophers in so obscure, so perplexed, and so unsatisfactory a way . . . that it is very difficult for any reader of but an ordinary capacity to understand what they mean." See *Selected Philosophical Papers*, 3; *Works*, vol. 3, 4-5. Or to cite a less well-known example, Joseph Glanvill was an ardent anti-Aristotelian whose works Leibniz knew (see, e.g., II i 14, 71, 81) and who writes that the "Peripatitick forms are . . . obnoxious" and is that "of what the Votaries of that Philosophy themselves can scarce tell what to make of." See his *Scep sis Scientifica*, 113. Such criticisms were common in the middle of the seventeenth century.

52. VI ii 440: L 99.

sort of immaterial form and maintain instead that all corporeal features are to be explained in terms of matter in motion. According to Leibniz, then, the reformers do not want to explain the features of (say) fire as the traditional scholastics had done, namely, in terms of some immaterial form in the fire. Rather, they agree with the mechanists that the heat in fire can be fully and intelligibly explained by simple reference to the movement of the matter that makes up the fire; there is no need to posit any other entity.

It is important to understand that the context here is one of physical explanations and that according to Leibniz, the reformers and the moderns offer one explanatory model while the scholastics offer another. Within this context, Leibniz wants to convince us (1) that the position of the reformers is consistent with the thought of Aristotle and therefore that the scholastics' interpretation of Aristotle's physics is incorrect; (2) that the reformers' position in fact *follows* from the fundamental principles of Aristotle's philosophy, once that philosophy is properly understood; and (3) that even if the physical explanations of corporeal phenomena offered by both the scholastics and reformers were "possible," the former would have to be rejected because of its lesser intelligibility and because (as he goes on to say) of the "manifest truth" of the reformed philosophy. A final point to note about Leibniz's strategy here is that, although the discussion is presently focused on physical explanations, it is ultimately about the metaphysical foundations of physics. Leibniz asserts that "the views of the moderns" about physics "flow from Aristotelian principles" – that is, from the basic constituents of Aristotelian metaphysics.

Having stated the conclusion for which he will argue and outlined his argumentative strategy, Leibniz turns his attention to the proof that the reformers and not the scholastics are correct about Aristotle's physics. He writes: "I cannot better show this . . . than by asking for any principle of Aristotle which cannot be explained by magnitude, figure, and motion."⁵³ He then proceeds to treat Aristotle's principles of matter, form, and change in turn. In each case, he takes one of these fundamental principles and transforms Aristotle's original notion into a mechanistic one. Prime matter becomes continuous mass (*massa*) "which fills the world while all things are at rest" and "from which all things are produced by motion and into which they are reduced through rest." As such, the "essence of matter or the very nature [forma] of corporeity consists in antitypy or impenetrability."⁵⁴

With this notion of matter in place, Leibniz proceeds to the crux of his reformation of Aristotle, namely, his account of substantial form. According to Leibniz, the substantial form of a body is its *figura*, which is an "organized arrangement of parts" of matter produced by motion. He writes: "For division comes from motion, the bounding of parts comes from division, their *figurae* from this bounding, and forms from *figurae*; therefore, forms come from motion."⁵⁵ At first glance, this seems quite un-Aris-

53. VI ii 435–436: L 95. 54. VI ii 435: L 95.

55. I explained in n. 75 of the last chapter that the Latin *figura* is ambiguous between the shape

totelian. For Aristotle, the substantial form is the cause of the being of the thing, what makes the thing what it is. As such, it is metaphysically prior and cannot itself be caused in this manner. What Leibniz has done here is to make motion the cause of the being of a thing and thereby deprived substantial form of its causal and metaphysical priority. When it comes to change, Leibniz reduces the various kinds of change (e.g., generation, corruption) to local motion. He thereby appears to deny what Aristotle considers the essentially purposive aspect of nature. Once Leibniz shows to his satisfaction that “all changes can be explained by motion,” he happily concludes that “there is obviously almost nothing in Aristotle’s physics which cannot be readily explained and made clear through the reformed philosophy.”⁵⁶

Thus far, Leibniz points out, he has only shown that “these positions can be reconciled; it still remains to show that they ought to be.”⁵⁷ As previously proposed, he will now demonstrate that they ought to be reconciled by showing how the physical explanations offered by the moderns “flow from Aristotelian principles.” But Leibniz’s present task is not a very difficult one. The first part of his demonstration virtually accomplishes it: because Leibniz has mechanized Aristotle’s basic principles of matter, form, and change and because Aristotle’s fundamental principles are the origins or sources of everything else in nature, the position shared by the reformers and moderns (namely, that all corporeal phenomena can be explained by matter and motion) will follow from those principles. Leibniz explains:

For what does Aristotle discuss, in the eight books of the *Physics*, besides figure, magnitude, motion, place, and time? If the nature of body in general can be explained in terms of these, a particular body must be explained in terms of a particular figure, a particular magnitude, etc. In fact, he himself says in the *Physics*, Book iii, Section 24, that all natural science concerns magnitude (with which figure is, of course, associated), motion, and time. . . . Everything in nature must therefore be explained through these.⁵⁸

In this context, Leibniz’s earlier comment about reconciling the reformers and Aristotle is not surprising: he wrote that “if the reconciliation is shown to be possible, it is by that fact accomplished.”⁵⁹ By so neatly mechanizing the Aristotelian principles, he has shown that the physical explanations proposed by both the moderns and the reformers really do follow from Aristotelian principles.

With the proof of the reconciliation completed, Leibniz goes on to argue that some of the more important details of Aristotle’s physics can also be

and the nature of a thing. Although Leibniz does not give a complete account of *figura* in the present letter, he does in the letter to Thomasius of October 1668. As I argued in the subsection entitled Demonstration of the possibility of the mysteries of the Eucharist, the term often designates an organized arrangement of parts of matter. This is the meaning of the term in the present context.

56. VI ii 437–438: L 97. 57. VI ii 438: L 98. 58. VI ii 438: L 98.

59. VI ii 435: L 95.

shown to conform to the position of the moderns. Leibniz's discussion here is reminiscent of De Raey: he presents a statement from Aristotle's writings of a fundamental tenet and interprets it so that it conforms to his analysis of the ancient.⁶⁰ The details of Leibniz's discussion need not concern us; what is important is that he manages to fit the recalcitrant parts of Aristotle's physics into the scope of his reformed philosophy. He concludes: "The Aristotelian Philosophy has been reconciled to the Reformed Philosophy."⁶¹

Leibniz is not yet satisfied. He now turns his attention to the final part of his demonstration and attempts to show "the manifest truth of the Reformed philosophy itself."⁶² He maintains that nothing is needed to explain the phenomena of the world besides magnitude, figure, and motion. Again, we can skip over the details of this discussion and go directly to the point: Leibniz here makes use of the nominalist principles for which he had argued earlier in his preface and thereby incorporates "the nominalist sect, the most profound of all the scholastics" into his reformed philosophy.⁶³ The nominalism that he learned at the university from Thomasius has stayed with him through the decade. In his preface, after praising the nominalist tradition and giving a brief history of its greatest members, Leibniz wrote: "The general rule that the nominalists frequently use is that *entities must not be multiplied beyond necessity* . . . which reduces to this: *the simpler a hypothesis is, the better it is*. And in accounting for the cause of phenomena, that hypothesis is the most successful which makes the fewest gratuitous assumptions. . . . The same thing is true of all the reformers of philosophy today; if they are not supernominalists, they are almost all nominalists."⁶⁴ In his letter to Thomasius, he now claims that:

there are no entities in the world except mind, space, matter, and motion and therefore that the hypotheses of those moderns [recentiores], who use only these to explain phenomena, are the better ones. For it is a defect in hypotheses to assume what is unnecessary. For truly all things in the whole world can be explained by these things alone. . . . And truly the human mind can imagine nothing other than *mind* . . . , *space, matter, and motion*, and what results from these things arranged [comparatis] among themselves.⁶⁵

60. It is important to note that although De Raey and Leibniz are quite similar in their methodology, they differ both on details and in their general goal. De Raey accepts many of the doctrines and much of the terminology of Descartes and considers himself a Cartesian; Leibniz rejects the Cartesian philosophy and accepts merely "the rule" of the moderns.

61. VI ii 441: L 100. It is noteworthy that Kabitz is one of the few scholars to consider seriously the conception of body that Leibniz offers in the letter to Thomasius of April 1669. After presenting a brief description of Leibniz's view of body, Kabitz explains that Leibniz's position (1) is merely an extension of the position articulated by Johannes de Raey in his book on the same topic, and (2) "has no interest or worth for us . . . in its details" (Kabitz, *Die Philosophie des jungen Leibniz*, 59–63).

62. Loemker does not include this sentence as it appears in the 1670 version; compare VI ii 441 and II i 21 and L 100. In fact, at this point in the translation, Loemker combines statements from each version without noting which is which. The differences between the two versions are important. I will discuss them in chapter 4.

63. VI ii 420: L 127. 64. VI ii 428f: L 128.

65. VI ii 441–442: L 100. Leibniz's emphasis.

Following the nominalists and reformers, Leibniz claims that everything in nature can be explained wholly in terms of mind, space, matter, and motion. There is no reason to admit the use of superfluous immaterial forms (or anything else) in natural explanations. Therefore, scholastic science ought to be rejected and reformed philosophy accepted.

By such means, Leibniz has completed the tripartite demonstration originally promised: he has shown (1) that the position shared by the reformers and moderns is consistent with the physics of Aristotle and therefore that the scholastics' interpretation of Aristotle's physics is incorrect; (2) that the reformers' position follows from the fundamental principles of the Aristotelian system once that philosophy is properly understood; and (3) that even if the physical explanations offered by both the scholastics and reformers were "possible" as accounts of corporeal phenomena, the former would have to be rejected because of its violation of nominalist principles. With impressive finesse, Leibniz has shown not only that the reformers interpret Aristotle's physics more properly than do the "uncultured" scholastics,⁶⁶ but also that they accept the insights of the nominalists. The materials are in place to formulate the "truth per se." Leibniz now goes on to erect the foundations for the true reformed philosophy.

Theory of substance

In the remainder of his letter to Thomasius, Leibniz presents a theory of substance that is supposed to constitute the foundations of the proper reformed philosophy. Two closely related problems arise at this point in the text. First, Leibniz does not reveal in the letter itself any good philosophical reasons for preferring the reformed philosophy to the mechanical one. The only criticism that he can muster against the moderns is to note that they play a part in the dismantling of philosophy. He does not explicitly criticize their view. It is therefore very difficult to understand in the context of the letter why one should favor the reformed philosophy over mechanism except for the fact that the Aristotelian language of the proposed reform might make it more palatable to traditional Aristotelians. To put the problem another way, if the mechanical explanatory model is successful by itself, then there is little reason to contaminate it with anything out of Aristotle. Second, because it is difficult to see anything genuinely Aristotelian in Leibniz's proposals so far, there seems little reason to take Leibniz's proclamations of the virtues of Aristotle seriously. This part of the letter is so obscure and Leibniz's views so difficult to make out that commentators have taken Leibniz's conception to be a version of mechanism merely translated into Aristotelian terminology.⁶⁷

66. VI ii 425: L 127.

67. It is not surprising that even those commentators who have understood Leibniz's account of bodies in the letter have balked at this point and felt justified in disregarding Leibniz's claims of Aristotelian authenticity. See Aiton, *Leibniz*, 28ff; Wilson, *Leibniz's Metaphysics*, 46-47; Robinet, *Architectonique disjonctive*, 129ff; Moll, *Der junge Leibniz*, vol. 2, passim;

Neither of these problems seems too severe, however, against the historical and philosophical background proposed above. Leibniz's contemporaries were well aware of both the general complaints leveled against the mechanical philosophers and the varieties of extant interpretations of the Aristotelian philosophy. Leibniz's proclamation about the virtues of the Aristotelian philosophy would have offered ample evidence of the general nature of his approach both to the ancient and modern philosophies. Moreover, to have made a frontal assault on the mechanical philosophy would have smacked too much of sectarianism. Leibniz chose instead to insinuate the weaknesses of the mechanical philosophy. That Leibniz took the metaphysical foundations of mechanism to be inadequate would have been evident to his reader. As we saw in the analysis of the *Confession of nature against the atheists* in chapter 2, Leibniz maintains that as far as can be done, "everything should be derived [deducere] from the nature of body and its primary qualities – magnitude, figure, and motion."⁶⁸ According to Leibniz there, the account of body as *res extensa* is not adequate as a definition of corporeal substance because it is not sufficient by itself to explain its primary features. In the essay *On transubstantiation*, Leibniz makes body substantial by adding mind to it. By proposing the Aristotelian philosophy in the way that he does in the letter to Thomasius, Leibniz would have made the nature of his criticisms of the mechanical philosophy evident to his contemporaries. Let's now look more carefully at what those proposals and criticisms involve.

The conception of substance presented in the April 1669 letter to Thomasius includes an account of prime matter, substantial form, and their relation. I will treat each of these in turn. According to Leibniz, prime matter is mass itself in which

there is nothing but extension and antitypy or impenetrability. It has extension from the space which it fills. The very nature of matter consists in its being something solid [crassum quiddam]. . . . Now this continuous mass filling the world [mundum replens], when all its parts are at rest, is prime matter, from which all things are made through motion and into which they are reduced through rest. There is no diversity in it . . . except through motion.⁶⁹

This is a clearer account of the position of the 1668 letter to Thomasius discussed in chapter 2, section 2. What has been added is that prime matter now has its own well-defined nature.⁷⁰

Hannequin, "La première philosophie" 45f; Kabitz, *Die Philosophie des jungen Leibniz*, 61f; Petersen, *Geschichte*, 351; and Beeley, *Kontinuität*, ch. 6.

68. See ch. 2, sect. 2, n. 23.

69. VI ii 435: L 95. Compare what Leibniz says here to Robert Boyle's account of the mechanical philosophy as quoted in ch. 2, sect. 2, n. 16.

70. In the 1668 letter to Thomasius, Leibniz used the Latin term 'moles' to describe the mass in bodies; he now uses 'massa.' In *On transubstantiation*, Leibniz defined body as that which exists in space (see VI i 508: L 115). Clearly, by the time of his April 1669 letter to Thomasius, Leibniz's conception has shifted slightly. He tells us here that the nature of matter consists in extension and impenetrability.

Concerning substantial form, Leibniz again maintains that God, by acting on matter through motion, creates what there is in the world. He adds:

Forms must necessarily arise from motion. . . . For, the division [of prime matter] comes from motion, the boundaries of the parts [termini partium] come from division, their *figurae* come from the boundaries of parts, and forms from *figurae*; therefore forms come from *figurae*. . . . [Thus] forms arise from the potential of matter, not by producing something new, but by . . . causing boundaries through the division of parts.⁷¹

If we take *figura* here to be the organization or arrangement of parts of matter, then Leibniz's point becomes clear: arrangements of parts of matter (*figurae*) arise from motion and constitute the nature (*forma*) of body. By so describing what the relation is between matter and form (forms arise out of matter) and hence what the relation is between body and form (form is the *nature* of body), Leibniz helps to explain the exact relation between corporeal features and the form or nature of body.⁷² It follows that Leibniz's description of matter, body, and form is consistent with mechanical physics. As Leibniz puts it: "Physics deals with the Matter of things, and the unique affection resulting from the combination of matter with the other causes, namely, Motion."⁷³ But this is a mechanism with a difference: Leibniz's version not only reduces corporeal features to the movement of the parts of body, it does so with a body that is itself self-sufficient in a way *res extensa* is not. That is, Leibniz has succeeded where he thought the other mechanists had failed: he explains how it is that corporeal features are all reducible to and explained in terms of the nature of body taken *by itself*. For, if a body (qua form or *figura*) is by definition an arrangement of matter in motion (as opposed to merely *res extensa*), then it becomes clear that insofar as corporeal features are reducible to "the subtle motion of parts," they are reducible to the nature of body. In short, Leibniz has devised a conception of body that avoids the problems that he claimed (for example, in the *Confession of nature against the atheists*) faced the Cartesian conception of body as *res extensa*.

But this is not the whole story concerning the relation between matter and substantial form. Leibniz continues:

Matter is devoid of motion in itself [per se]. Mind is the principle of all motion as Aristotle rightly saw. . . . Aristotle seems nowhere to have imagined any substantial forms which would themselves be the cause of motion in bodies, as the Scholastics understood them. . . . For form is indeed the cause and principle of motion, but not

71. VI ii 436: L 96.

72. Leibniz himself thinks that there are several advantages to his account of how matter gives rise to forms. For example, he emphasizes the fact that by such means, "all the arguments advanced against the origin of forms from the potentiality of matter itself become child's play and trifles," and "the vexatious problem of the origin of forms" is solved (VI ii 436: L 96). In other words, Leibniz believes that his account of form solves a problem that had long plagued (other) Aristotelian philosophers, namely, the problem of how forms arise out of the potentiality (*potentia*) of prime matter.

73. "Physica agit de rerum Materia, et ex eius cum ceteris causis complexu resultante unica affectione, nempe Motu" (VI ii 439: L 99).

the primary one. . . . I admit therefore that form is the principle of motion within its own body, and that body itself is the principle of motion in another body. But the first principle of motion is the primary form, which is really abstracted from matter, namely Mind. . . . Therefore, it is not absurd that of the substantial forms only mind should be designated as the first principle of motion.⁷⁴

Suddenly, at this point, a difficulty arises. Leibniz claims here that mind must supply motion to matter because “Matter is devoid of motion in itself” and that “Mind is the principle of all motion.” This seems clear enough until Leibniz adds that “form is the cause and principle of motion” in body. The problem is that on the one hand, he is quite explicit about the fact that “form is nothing but *figura* [an arrangement of parts of matter],”⁷⁵ while on the other, he insists that “form is the principle of motion within its own body.”⁷⁶ Nor does Leibniz help to sort things out. He merely asserts that the form is “not the primary [principle of motion]” and that “the first principle of motion is the primary form, which is really abstracted from matter, namely mind.”⁷⁷ He is silent about exactly how form is supposed to be both an arrangement of matter and a principle of motion. What are we to make of all this?

To answer this question, we need to turn to our analysis in chapter 2 of the difference between body qua matter and body qua form. In the discussion of Leibniz’s October 1668 letter to Thomasiaus and his notes on the Eucharist (at the end of section 2), we saw that although body qua form is caused and sustained by a concurring mind or God, it constitutes the essence of body as the organization of matter that it is.⁷⁸ As long as it is maintained by mind, it does have its own nature and can act as the cause of its own features. What this means is that once the form as *figura* (understood to be an arrangement of parts of matter) is created and maintained, it has a nature that is extended and impenetrable. This nature can itself *cause* motion in the sense that, when it is struck, it will move and, when it strikes another body, it will move the latter. The fact that mind is the first and ultimate principle of motion is consistent with the claim that, once “mind supplies motion to matter,” body (the result of activated matter) can cause particular motions.⁷⁹

With the exact relation between form and matter more clearly articulated, we can now turn to Leibniz’s conclusion at the end of his argument in the 1669 letter. But, again, this passage is less than perspicuous. Leibniz writes:

From these things it follows that *the nature of Body is constituted by Extension and Antitypy*, and since there is nothing in things without a cause [causa], by all means

74. VI ii 439–40: L 99. 75. VI ii 435: L 95. 76. VI ii 440: L 99. 77. Ibid.

78. As explained in ch. 2, Leibniz distinguishes between body qua matter (i.e., body taken to be passive) and body qua form (i.e., body taken to be active). Or, in Leibniz’s words, “[body] is to some extent active and can easily be called *form* in the Scholastic Style; it is to some extent passive and rightly called *matter* in the sense of the Scholastics” (VI i 502).

79. According to Leibniz, “[divine] Mind supplies motion to matter so that it might achieve for itself a Good and pleasing *figura* and state of things.” See VI ii 439: L 99.

nothing ought to be supposed in bodies whose cause cannot be presented by their first *constitutive principles*. But the cause cannot be presented by these unless by their *definitions*.⁸⁰ Therefore nothing should be supposed in bodies which does not follow from the definition of extension and antitypy. But from these follow only magnitude, figure, situation, number, mobility, etc. Motion itself does not follow from them. Hence, strictly speaking, motion does not belong to bodies, as a real being [*ens reale*] in them, but as I have demonstrated, whatever moves is continuously created. . . . Hence it is clear that the explanation of all qualities and changes must be found in magnitude, figure, motion, etc., and that heat, color, etc., are nothing besides the subtle motions and figures.⁸¹

The key to understanding the full significance of this passage is to recognize that Leibniz is here talking about body qua matter. That he has in mind body qua matter and not body qua form is clear for at least two reasons. First, the definition of body that he offers in this passage (as “constituted by Extension and Antitypy”) is equivalent to the one offered previously of prime matter.⁸² Second, the argument in the passage does not make sense otherwise. Once we realize that the body under discussion in this passage is body qua matter, the full significance of Leibniz’s comments become clear. We find here an explicit use of the Principle of Causal Self-Sufficiency, which claims that for any being S, strictly speaking, S cannot be said to have a feature f and f cannot be said to exist in S unless the full account (or complete *ratio*) of f can be found in the nature of S. Leibniz asserts in the above passage that, strictly speaking, S can be said to have a feature f or f can be said to be a real being (*ens reale*) in S only if the cause of S is either part of the nature of S or itself follows from (is reducible to) that nature. According to Leibniz, f can be said to belong to S or really exist in S only if a complete *ratio* of f can be found in S taken by itself. The argument in the passage therefore runs as follows: body qua matter is defined in terms of extension and impenetrability; the cause of motion cannot be found in body so defined; therefore, given the Principle of Causal Self-Sufficiency, motion is not a real being (*ens reale*) in bodies qua matter.

When properly understood, the passage here is important for what it reveals about Leibniz’s version of mechanism. As I mentioned in my discussion of the *Confession of nature against the atheists* in chapter 2, section 2, Leibniz and the mechanists agree that all corporeal features are explicable in terms of the nature of body and that motion itself cannot be derived from *res extensa* or extended matter alone; but I also noted that Leibniz and the mechanists seriously disagree about what these facts imply. Most mechanists were perfectly willing to let God be the cause of motion in bodies without taking body to be incomplete or insufficient as a consequence. That is, because they did not share Leibniz’s commitment to substantial self-suffi-

80. “Ex his patet, *naturam Corporis constitui per Extensionem et Antitypiam*, quumque nihil sit in rebus sine causa, nihil etiam poni debet in corporibus, cuius causa reddi non possit ex primis eorum constitutiis. Iam causa ex iis reddi non potest, nisi per eorum *definitiones*.” Leibniz’s emphasis.

81. VI ii 443; L 101–02. 82. See n. 69.

ciency, mechanists like Descartes and Gassendi were perfectly happy to accept that although motion is not reducible to the nature of body qua matter, it nevertheless *belongs* to it. For instance, Descartes maintains that motion is a mode of extension, even though it has to be added to extension by God. The important point to emphasize is that regardless of how motion comes into the picture, these mechanists took two things to be true about it: (1) it is not reducible to or caused by the nature or essence of body and yet (2) it is an actual (and many thought essential) feature of body. Leibniz is now explicitly offering (1) as a reason for denying (2). That is, Leibniz maintains that motion is not a feature of body or a real thing (*ens reale*) in body exactly because its cause cannot be discovered in extended matter.

It follows that motion is neither part of the essence of body qua matter nor even an actual feature of it. No doubt, the conclusion to draw from this is that motion belongs to body only insofar as body is created and maintained by concurring mind. And it is here that we find the key to understanding both how Leibniz's position differs from the mechanists and is itself Aristotelian. The crucial point is that body qua matter is different from body qua form. The former is nothing other than impenetrability and extension, matter without mind, without a principle of activity, and hence without motion. The latter is something different in that it is combined with mind in such a way as to form a substance with it. Where Leibniz disagrees with the mechanists (and perhaps rightly so) is that he thinks we must clearly distinguish between body qua matter and body qua form.⁸³ The former is inert stuff and clearly does not have motion as a real being in it, while the latter does have motion insofar as it is a union of matter and mind. As Leibniz puts it in *On transubstantiation*: "It must be demonstrated . . . against Descartes that space and extension are really different from body because otherwise motion would not be a real thing [in body]."⁸⁴ Because matter cannot have motion unless it is combined with mind, it follows that it is inappropriate to say that motion belongs to body qua matter. Once (divine) mind adds motion to matter, we no longer have matter; rather, we have a union of matter and mind. Leibniz's point is that this union is fundamentally different from mere matter and is what constitutes the nature of a non-human corporeal substance.

3. Conciliation and the Metaphysics of Substance

I have claimed that Leibniz's central concern in his letter to Thomasius of 1669 is to construct a metaphysics of substance that combines core features

83. It is fascinating that Johann Clauberg, a first generation Dutch Cartesian, recognized this same problem and struggled nobly in his *Disputationes Physicae* of 1664 to solve it. For a discussion of this and other details of Clauberg's attempts to clarify and expand on Descartes' conception of corporeal substance, see my "Clauberg, Corporeal Substance, and the German Response."

84. VI i 509.

of the metaphysics of Aristotle with mechanical physics. In Leibniz's words, he intended to show that "the reformed philosophy can be reconciled with Aristotle." A thorough examination of the letter has uncovered an elaborate and enormously clever attempt to do just that. Against the background of Leibniz's criticism of mechanism, and with the help of his Aristotelian assumptions, the genuine Aristotelian flavor of the theory he proposes in his letter is evident. He constructs an account of corporeal substance that is appropriately self-sufficient and properly Aristotelian by demoting *res extensa* to a mere constituent of substance and by distinguishing between a primary form and the form or *figura* in an individual substance. For Leibniz, prime matter is extended stuff that functions as the potential principle, and thereby plays exactly the same *role* as Aristotle's matter: it is that "from which all things are made."⁸⁵ Although *res extensa* is not a substance by itself, Leibniz has neatly made it the passive element in substance: when *res extensa* is joined with the primary form that functions as its principle of activity, it becomes a constituent of a self-sufficient corporeal substance.⁸⁶ Like the Aristotelian notion, Leibniz's matter is indeterminate and must be made into an individual thing by its substantial form. As Leibniz writes in a passage we have seen: "For [divine] Mind supplies motion to matter. . . . Matter is devoid of motion per se. Mind is the principle of all motion, as Aristotle rightly saw."⁸⁷ It is significant that the individual substance here is composed of indeterminate matter and a determining form (namely, God) and that, once this "organized arrangement of parts" of matter or *figura*⁸⁸ is created, it is itself a principle of motion. God may cause (and sustain) the organization of the parts of the substance, but once those parts are so organized, the (secondary) form is able to act as a cause of motion both in itself and in another body. The scholastics often made a distinction between God, as the primary cause of things, and individual corporeal nature, as the secondary cause. The latter, although sustained by God, could be seen to have its own causal power. The scholastic distinction is similar to the one that Leibniz makes here: although God or "primary mind" sustains the organization of the corporeal substance, the latter has the power to act. For example, when it strikes a body, it is the cause (along with the organization of the other body) of the resulting motion.⁸⁹ If we understand this (secondary) form to be the arrangement or organization

85. VI ii 435: L 96.

86. In chapter 2, I made this point in reference to *On Transubstantiation*, where Leibniz writes, for example, that "no body apart from concurring mind [mente concurrente] is to be taken as substance," "substance is union with mind," and so "the substance of body is union with a sustaining mind" (VI ii 509: L 116).

87. VI ii 439: L 99. 88. VI ii 436: L 96.

89. Unlike what some scholars have thought, therefore, Leibniz's conception of substance in the April 1669 letter to Thomasiaus is not an extreme version of occasionalism: although God causes the matter in the substance to move, once this *figura* is formed, it can itself act as the cause of the motion in another body, say, by striking it. Leibniz's secondary form here is an instance of the scholastic notion of secondary cause. For a discussion of secondary causes, occasionalism, and their philosophical differences, see Fred Freddoso, "Medieval Aristotelianism and the Case against Secondary Causation in Nature." For a

of primary matter, then it has some of the features of the Aristotelian notion: it constitutes the nature of the substance and the cause and explanation of its essential features.⁹⁰ While it remains perfectly clear that much of what Leibniz says about matter and (secondary) form in this letter is inconsistent with anything the ancient accepted, these unaristotelian elements fit neatly within a theory of substance that has the structure of Aristotle's. For example, although God is the principle and cause of individuation and matter has a well-defined nature, the fact that they combine as active and passive elements to form a union that constitutes the cause and explanation for substantial features is recognizably Aristotelian.⁹¹ With admirable finesse, Leibniz has placed a version of mechanical physics firmly on an Aristotelian foundation. In the process, he has made corporeal substances self-sufficient and saved Aristotelian substantial forms from ridicule. For the sake of convenience, it will be helpful to summarize Leibniz's original notion of substance.

- The *Original Theory of (non-human) Corporeal Substance* asserts that divine mind (or primary form) takes body qua matter, which is extended passive matter, activates or organizes it and thereby produces a (secondary) form or body qua form (i.e., an organized arrangement of matter) which has its own essence and is the cause and explanation of its (primary) features.

For the twenty-first-century reader, however, there may still be lingering doubts. Leibniz's proposed conception of substance is so significantly different from that of Aristotle himself that one has to wonder about Leibniz's sincerity. We may continue to feel uncomfortable about what one commentator called "a perpetual violence made on Aristotle."⁹² Did Leibniz himself believe that his proposal was a genuine reconciliation of the ancient and modern philosophies? Fortunately, there is ample evidence that Leibniz was perfectly ingenuous in his proposals.

The historical material of this and the previous two chapters provides copious evidence that Leibniz was well aware of the wide range of Aristotelian options in the period. He was surely cognizant of the fact that some readers would not be sympathetic to his reformed philosophy and its interpretation of Aristotle. Thomasiaus had responded to an earlier (and less developed) version of Leibniz's conciliatory philosophy by warning his student that before there can be "any hope of harmony [among the philosophical schools], . . . we need to examine a bit more fully the mind of the philosopher." After suggesting that Leibniz has misunderstood Aristotle, his esteemed teacher goes on to point out that the substantial form cannot be iden-

helpful summary of the sort of occasionalism that has falsely been attributed to Leibniz, see Steven Nadler, Introduction, *Causation in Early Modern Philosophy*, 4–5.

90. See, e.g., II i 11, VI ii 443: L 102.

91. Nor is this interpretation of Aristotle's notion of substantial form a modern anomaly: Leibniz's proposal here is somewhat like that made by Suárez and some other scholastics – namely, that the figure or form (*figura*) of a body is something like "the determination of magnitude" (Disp. XLII, Sect. III, 15).

92. Hannequin, "La première philosophie," 49.

tical to accidental things like the figuration and magnitude of parts "in whose agreement you seem to want to construct the harmony."⁹³ Then Thomasius acknowledges that he is "aware of this way of talking" and that others may accept this way of making "peace." Although Thomasius rejects Leibniz's conciliatory proposal, he does not find the position shocking.⁹⁴

Even without the approval of his esteemed teacher, Leibniz was proud of his original theory of substance and his first attempt at a conciliatory philosophy. In his writings of 1668–69, he frequently emphasizes his success at revealing the true sophistication of the philosophy of Aristotle.⁹⁵ An especially striking example of this is offered by one of his most important early publications, the *New Physical Hypothesis* of 1671, which he sent to many of the foremost natural philosophers in Europe and in which he proudly announces his reconciliation of Aristotle with the mechanists.⁹⁶ There is ample evidence that like many of his contemporaries, he believed the philosophy of Aristotle to be "very different than commonly described,"⁹⁷ and that he took his own synthesis of Aristotelian and mechanical doctrine to be an important step toward revealing the truth in the ancient philosophy. In other words, Leibniz agreed with reformers like Weigel, Digby, and De Raey who claimed that the real value of the "new" physics was that it revealed the true sophistication of Aristotle's thought on matters that the scholastics had left obscure. Leibniz asserts, for example: "Moreover, from this notion of body and substantial form, there is hope that it is possible to penetrate little by little into the essence of body about which the Scholastics bid us to despair."⁹⁸

In a letter of January 1671 to the German Aristotelian, Hermann Conring, Leibniz summarizes his progress in the development of a true metaphysics of substance and advertises its conciliatory power. He explains that through an analysis of "the nature of things," he came to accept the thesis that "everything in bodies can be derived from magnitude, figure, and motion." Not only has he discovered that this thesis is to be found in Aristotle, according to Leibniz: "all the following agree: Plato . . . , Democritus and Leucippus, Lucretius, Bacon, Gassendi, Descartes, Hobbes, Digby, and all the other great men of our time."⁹⁹ Conring's reaction is noteworthy. He rejects Leibniz's attempt at reconciliation and insists that "it is not the case" that all these ancient philosophers would accept the mechanical philosophy.¹⁰⁰ But Conring is neither shocked nor dismayed by Leibniz's proposals. Rather, as he explains, his rejection of the new physics is partly due to the fact that the "new empirical data" are perfectly consistent with Aristotle's views and partly due to the fact that there are too many ignorant practitioners of the modern philosophy who are too willing to ignore much that is important about the ancient thought. Like Leibniz, Conring intends to find "a middle path" between "the old and the new," but he insists that his position is closer to the real thought of the ancients. Like Thomasius, Con-

93. II i 12. 94. II i 13. 95. E.g., II i 15, 17; VI i 510. 96. VI ii 247.
97. VI ii 425; L 127. 98. II i 11. 99. II i 80. 100. II i 86

ring wants to have nothing to do with a synthesis of ancient and modern ideas forged out the new physics.¹⁰¹

An important point lurks here. Not only is the seventeenth century full of philosophers in search of the real Aristotle, these would-be Aristotelians are themselves perfectly aware of the enormous differences among interpretations. Although from our scholarly perspective, some of these appear anachronistic, Leibniz and his contemporaries were fully versed in a whole range of alternative accounts of the ancient thought. In short, even if we consider Leibniz's interpretation of the philosophy of Aristotle to be a disturbing distortion, his proposals did not come as a surprise to his contemporaries, even to those who flatly rejected the mechanical physics.

But the most vivid display of the motivation and sincerity behind Leibniz's reformed philosophy occurs in a paragraph that he wrote to Thomasiaus in April 1669 but deleted from the published version of the letter. He tells his teacher that the "truth per se" of the reformed philosophy must be shown "in the same way that the Christian religion can be proven by reason and experience as well as by sacred scripture."¹⁰² He then continues the analogy:

The saintly fathers clarified the sacred scripture with the best interpretations; the monks soon obscured it with their superstitions. Now it has become clear that . . . the reformed theology is threefold: there is heretical theology that rejects the scriptures themselves . . . ; there is the schismatical theology that rejects the ancient fathers of the church . . . ; there is the true theology that reconciles the teachers of the church with the sacred scriptures and the earliest church. . . . Similarly, the Greek interpreters clarified Aristotle; the Scholastics obscured him by idle talk. Now it has become clear that the reformed philosophy is threefold: the dull [stolida] philosophy, that of Paracelsus, Helmont, and others, that straightforwardly rejects Aristotle; the audacious philosophy that has little concern for the ancients, nay, open contempt for them and replaces even the good ideas with suspicious meditations, as Descartes did; and the true philosophy that understands Aristotle to be both a great man and for the most part true.¹⁰³

In this extraordinary passage, Leibniz compares Aristotle to sacred scripture and the Greek commentators to the church fathers.¹⁰⁴ In the same way "the monks" perverted the Bible, so the schoolmen obscured Aristotle. Analogous to the true theology which will be grounded in the Bible, the true

101. II i 87. Leibniz does not abandon his hope of engaging Conring on topics concerning the new natural philosophy. He sends Conring his new work on physics (see II i 94) and he continues the correspondence. See, e.g., the important letter to Conring of March 1678, which was discussed in ch. 1, sect. 4.

102. Loemker includes this sentence in his translation (100), but not the rest of the passage. In fact, the whole passage is deleted from the 1670 version. Loemker does not make this clear.

103. II i 21; compare VI ii 441.

104. This comparison suggests that in Leibniz's opinion, the writings of Aristotle contain an abundance of Christian truths and are therefore sacred. It also constitutes evidence for my claim in ch. 1, sect. 4 that, according to Leibniz, pagans can divine the underlying metaphysical truths.

reformed philosophy will be one of reconciliation grounded in the philosophy of Aristotle. Leibniz's commitment to a reformed philosophy is clear, as is the fact that he had no taste for any philosophy (audacious or otherwise) that ignored the "great man."

In chapter 1, I focused on a puzzle that arises concerning Leibniz's early works: on the one hand, he appears to convert to the mechanical philosophy during his walk in the Rosental woods; on the other, he insists throughout the period on his commitment to the philosophy of Aristotle. We have finally fully resolved that puzzle. Once we see the works of the 1660s as motivated by a conciliatory eclecticism, and the published letter to Thomasius as an attempt to offer just such a philosophy, the importance of the period and the letter to Thomasius become clear. Not only do the texts of the 1660s display Leibniz's two-part methodological assumptions, they contain his first attempt at original *Metaphysics of Substance*. Indeed, when Leibniz emerged from the Rosental grove, he was on a path that would lead to his letter to Thomasius of April 1669 and eventually to his *First truths*. As we will see in the next chapter, Leibniz revises his Original Theory of Substance, but he never strays from the Aristotelian assumptions attributed to him in chapter 2; and, in fact, his revised version of substance is also modeled on an Aristotelian conception. In the 1670s, as Leibniz's interests and sources expand to match the intellectual fecundity of the period, it becomes more and more difficult to identify the myriad of sources for his eclectic system, but he nonetheless remains fundamentally committed to a conciliatory *Metaphysics of Substance* importantly centered around the thought of Aristotle. However much the details of his thought evolve, Leibniz does not waver from his attempt to forge a synthesis of Aristotelian metaphysics and mechanical physics. And however much the sources of his doctrines multiply and vary, he continues to attempt to achieve a philosophy of reconciliation. Thus, Leibniz could write in 1714, in the same letter to Remond with which I began chapter 1:

I have found that most of the sects are right in a good part of what they propose, but not so much in what they deny. The formalists, Platonists and Aristotelians, for example, are right in seeking the source of things in final and formal causes. But they are wrong in neglecting efficient and material causes. . . . I flatter myself to have penetrated into the harmony of these different realms and to have seen that both sides are right provided that they do not clash with one another: that everything in nature happens mechanically and at the same time metaphysically but that the source of mechanics is in metaphysics. *It is not easy to uncover this mystery, because there are few men who take the pains to combine both types of study.*¹⁰⁵

105. G III 607: L 654. My emphasis.

Second conception of substance, 1669–early 1671

In 1671, Leibniz published two related works which constitute his first extended account of the laws of motion and their metaphysical foundations and which he considered important (and good) enough to bring to the attention of some of the most powerful intellectuals in Europe. The first, the *New Physical Hypothesis*, subtitled *Theory of Concrete Motion*, he dedicated to the Royal Society of London; the second, the *Theory of Abstract Motion*, he dedicated to the French Academy of Sciences. Together, these works, which Leibniz often refers to as the *Schediasma* in his correspondence,¹ propose a physical system replete with creation story and laws of collision.² A year after the publication of the texts, Leibniz left for his four year stay in Paris, where he was to meet and converse with many of the leading philosophers, scientists, and mathematicians of his time. That the *Schediasma* is the culmination of Leibniz's early study in natural philosophy is clear. But it also seems obvious that its conception of substance represents a dramatic change from the position in the letter to Thomasius of April 1669. In the letter, body qua matter, which is a being in space, is activated by God and thereby becomes a corporeal substance whose nature is described as its substantial form. In the *Theory of Abstract Motion*, Leibniz maintains that bodies are momentary minds whose every action is a momentary endeavor or *conatus*. There is no mention of substantial forms or anything else typically Aristotelian.

In chapter 1, I maintained that Leibniz's early conciliatory method and his desire for the reconciliation of an Aristotelian metaphysics of substance with mechanical physics continued unabated and formed the foundations of his mature thought. In chapter 2, I attributed to Leibniz a number of metaphysical principles which I claimed constitute the fundamental assumptions behind his Metaphysics of Substance; and in chapter 3, I showed that the conception of substance that Leibniz accepts in 1669 is in fact a successful reconciliation of a version of Aristotelian substance with mechanical physics. The implication of these chapters is that Leibniz persists in his

1. Both Leibniz and his correspondents refer to the two-part *Theory of Abstract Motion* and *New Physical Hypothesis* as his *Schediasma*. In one letter, Leibniz calls them "Schediasma meum duplex" (II i 125). See also, e.g., II i 75, 94, 95, etc.
2. For a thorough introduction to the physical proposals of these works, see Garber, "Leibniz: Physics and Philosophy," 271–81; for an interesting interpretation of Leibniz's metaphysical and physical proposals in this two-part work, though one that differs from mine, see Bealey, *Kontinuität*, chs. 9 and 10.

(Aristotelian) Metaphysics of Substance. Therefore, the total absence of anything obviously Aristotelian in texts as important as the *New Physical Hypothesis* and *Theory of Abstract Motion* seems flatly to contradict my interpretation.

Nor do any of the scholarly treatments of the *Schediasma* offer my interpretative story any support. On the basis of the two-part work (and sometimes a few related texts), twentieth-century scholars have consistently come to one of two very different conclusions. Either they have taken the momentary minds of the *Theory of Abstract Motion* as precursors of monads and claimed that between 1671 and the publication of the *Monadology* in 1714, Leibniz is working out the details of his monadism.³ Or they have argued that despite Leibniz's apparent attempt to reduce bodies to minds, he is committed to the real extension of bodies, and therefore that he must have developed his mental monism at some point later in his career.⁴ For those few commentators who have noticed the Aristotelianism of the 1660s, the claim has been that by 1671 Leibniz has discarded the remaining residue of his scholastic past and wholeheartedly accepted the mechanical philosophy and the notion of material extension at its core.⁵

In the previous chapters, I have attempted to show that once we put Leibniz's texts of 1668–69 in their appropriate historical and philosophical context, a Metaphysics of Substance emerges where previously none was observed. In this chapter, I continue with this historically informed approach and argue that once we place the *Schediasma* and related writings in their proper historical, philosophical, and textual contexts, Leibniz's metaphysical proposals in 1671 emerge as thoroughly compatible with his Aristotelian Metaphysics of Substance. While I agree with those commentators who attribute to Leibniz a mental monism in 1671, I take Leibniz's position to be both much more complicated and much more interestingly motivated than has previously been understood.⁶ In order to discern the reasons behind Leibniz's denial of the reality of extended (primary) matter in 1671, we

3. See Capek, "Leibniz on Matter and Memory," 87–96; Garber, "Motion and Metaphysics," Kabitz, *Die Philosophie des jungen Leibniz*, 78; Hannequin, "La première philosophie," 61ff; and Bernstein, "Conatus, Hobbes, and the Young Leibniz," 25–37. Bernstein, for instance, shows nicely how Leibniz reformulated Hobbes' notion of *conatus*, and then notes that whereas Hobbes solved the mind-body problem by reducing every thing to motion, Leibniz did so by reducing everything to mind. Bernstein writes: "No wonder commentators have divined a prophetic anticipation of Leibniz's monadology in the juvenilia we have cited" (37).

4. For recent examples and citations to others, see Arthur, *Labyrinth*, Introduction; Beeley, *Kontinuität*.

5. E.g., see Brown, *Leibniz*, esp. sect. 3.3.

6. On the whole, those commentators who have claimed to find in the texts of 1671 the precursors to monads are those who have not recognized Leibniz's early Aristotelianism and who seem to assume that he was somehow always a mental monist. My interpretation differs significantly in that I think that Leibniz believed in the real extension of matter until 1670 and then, for complicated reasons that I articulate in chs. 7 and 8, decided to replace extended matter with an infinity of minds.

must grasp some of his underlying Platonist assumptions.⁷ I present these assumptions in chapter 5 and unpack some of their most obvious implications for Leibniz in chapter 6. Therefore, a full account of Leibniz's views about matter in 1671 must be postponed until chapter 7. In this chapter, I skirt the topic of matter and focus instead on mind and substance. I maintain that commentators are correct to notice that the metaphysical underpinnings of the *Schediasma* mark a change from those of the letter to Thomasius of April 1669. However, although these changes constitute a fascinating revision of Leibniz's earlier views about substance, they are by no means a rejection of his Aristotelian Metaphysics of Substance. In short, I claim that the underlying metaphysics of the *Schediasma* and related texts is thoroughly Aristotelian and perfectly compatible with the developmental story of the previous chapters.

Leibniz changes his opinion about the nature of substance at least twice between the time of his April 1669 letter to Thomasius and the *Schediasma* of early 1671. The first change occurs between the original letter to Thomasius and the revisions for its published version (that is, between April 1669 and late 1669). Although the actual number of additions and deletions in the second version of the letter are few, they represent a fundamental shift in Leibniz's views. He does not discontinue his Aristotelian approach to substance, but he does significantly modify the active principle within his theory of substance: the second version of the letter adds an active principle to extension as an element *in* corporeal substance where before there was only the mind of God acting from afar. The second change occurs during Leibniz's preliminary work in 1670 for his *Schediasma*. Sometime in early 1670, Leibniz begins to use the term *conatus*, which I will translate as 'endeavor,' and to describe bodies or corporeal substances as "momentary minds." For the sake of easy reference, I will call this revised account of substance Leibniz's *Second Theory of Corporeal Substance*.

The goal of this chapter is to describe correctly and motivate thoroughly these changes in Leibniz's theory about mind and substance between April 1669 and late 1670. Although Leibniz will continue to revise his theory of substance, he does not alter the general structure of the conception for the rest of his philosophical career. A thorough investigation of the steps in Leibniz's philosophical evolution during these months will help to reveal part of the deep motivation behind his mature conception of substance. It is worthwhile, therefore, to display the exact problems with the original conception of substance and to trace the development of its solution. In sec-

7. In my PhD thesis, I energetically argued that Leibniz remained committed to the real extension of matter in 1671; and in the article (coauthored with Robert C. Sleigh, Jr.) in the *Cambridge Companion to Leibniz*, I suggested the same. See *The Origins and Development of Leibniz's Metaphysics*, especially chs. 3–4, and "Metaphysics: The Early Period to the *Discourse on Metaphysics*." Obviously, I have significantly changed my views. It was the recognition of Leibniz's early Platonism that led me to reconsider these texts and my interpretation of them. The material in the chapters that follow bears witness to Leibniz's Platonism and to its importance in deciphering the early texts.

tion 1, I discuss Leibniz's reasons for modifying his original account of substance. In section 2, I present the changes in the published version of his letter to Thomasius and claim that they represent a significant revision of his views. In sections 3 and 4, I describe the stages in the development of Leibniz's Second Theory of Corporeal Substance. With the help of an unnoticed theological essay, I uncover Leibniz's original attempt to construct an account of substantial activity and substantial unity. As we will see, this account of activity played a crucial role in the evolution of his views about substance. Finally, in section 5, I explicate this revised account of substance and make some summary remarks about his method and general interests during the period. In light of his Aristotelian assumptions and Original Theory of (non-human) Corporeal Substance, it will become clear that Leibniz's notion of substance during the period of the *Schediasma* is quite different than previously thought.

1. Substantial difficulties

Leibniz's Original Theory of Substance situates mechanical physics within an explicitly Aristotelian framework. As explained in the last chapter, this conception both accepts mechanical physics and rejects its standard metaphysical foundations. Leibniz maintains that a body qua matter is not itself a substance because it does not subsist in itself and it does not subsist in itself because it lacks a principle of activity. As long as body is taken to be merely extended stuff, it will not be substantial, will not be the cause of its features, and hence (by the Principle of Causal Self-Sufficiency) will not properly speaking *have* its features. As discussed in chapter 2, because only mind or something incorporeal can act as a principle of activity, body as *res extensa* must be joined with mind in order to acquire a principle of activity that can give it motion. Therefore, in Leibniz's original theory, God activates primary matter with the result that there are arrangements of matter, where each arrangement constitutes the nature of an individual corporeal substance. By such means, an individual corporeal substance comes both to exist and to have an essence that can act as a cause and explanation of all its features: its features are reducible to and caused by the arrangement of its activated parts. According to Leibniz's original conception, the truth of mechanical physics fits neatly within his Aristotelian Metaphysics of Substance.

In the writings of 1668–69, Leibniz frequently emphasizes the several advantages that he thinks this conception of substance has. He points out that his original conception is a source of reconciliation among the various schools,⁸ establishes both an excellent argument for the existence of God and a satisfactory account of transubstantiation,⁹ reveals the true sophistication of the philosophy of Aristotle,¹⁰ corrects the mistake of the mechanists by making substance once again appropriately self-sufficient,¹¹ and

8. E.g., II i 15, 17; VI i 510. 9. E.g., II i 11, 24; VI i 287, 489, 494.
10. E.g., II i 15, 17. 11. E.g., VI i 489, 508.

solves the problem of the explanatory inadequacy of *res extensa* by distinguishing between body qua matter and body qua form. That is, because body qua form is a union of both matter and mind, it can be the cause and explanation of its features, and hence its features can properly be said to belong to it.¹²

The apparent power of Leibniz's original conception of substance to solve a number of problems at once is impressive. He probably would have maintained this theory if not for a problem he found lurking beneath the surface, one significant enough to require a dramatic shift in his thinking. The problem is due to the fact that while body qua form is different from primary matter and has a nature in terms of which its features can be explained, that nature is itself *caused* by a substance distinct from it, namely, God. What Leibniz came to realize is that his attempt to make primary matter complete and substantial by joining it with divine mind fails because body qua form is not itself sufficiently causally autonomous; moreover, body qua form is not causally autonomous because it does not have its *own* principle of activity. In his April 1669 letter to Thomasiaus, Leibniz (unwittingly) displays part of the difficulty: "Physics deals with the Matter of things, and the unique affection resulting from the combination of matter with the other causes, namely Motion."¹³ The problem with the original conception of substance arises because, although corporeal features follow from the combination of matter and motion, the motion of the parts of a body (that is, the motion *within* a body qua form) is itself caused by something substantially distinct from body. While the nature of body – as an arrangement of parts of matter – is constituted by matter and its arrangement or motion, something outside of that nature causes the motion and hence the nature. According to Leibniz, although "[e]very action of body is a variation of the essence of body" and every "variation of the essence of body . . . is motion,"¹⁴ God is the cause of each variation of essence in that God is the cause of motion.¹⁵ The Principle of Substantial Self-Sufficiency claims that a being S is a substance if and only if S is self-sufficient and, following the Principle of Self-Sufficiency, S is self-sufficient if and only if the full account or complete *ratio* of all of its features can be discovered in the nature of S. It follows from the Principle of Substantial Self-Sufficiency and the fact that God is the cause of the activity or motion within the body that body is not self-sufficient and hence is not a substance. Because Leibniz was concerned

12. E.g., II i 20; VI i 502. 13. II i 20: L 99. 14. VI i 508: L 116.

15. It is crucial to keep in mind that for any corporeal substance, there are two levels of activity or motion. For example, the kitchen table is in motion as I push it across the floor; the baseball is in motion once I hurl it through the air. But each of these objects has a more fundamental level of activity or motion: each has the corporeal nature it has because the matter that makes it up is organized or activated or "moved" in a certain way. The table can be pushed and the ball hurled if and only if each has such a nature. Our concern here is with this more fundamental level of activity and its source. That is, we are concerned with the motion or activity of the matter that constitutes the nature of the body and hence is *within* the body.

to formulate a conception of substance that would be properly sufficient, the fact that his original conception turns out *not* to be self-sufficient constitutes a serious flaw.

There is however an even more serious problem, one that the Principle of Causal Self-Sufficiency helps to reveal. According to the Principle of Causal Self-Sufficiency, for any being *S*, strictly speaking, *S* cannot be said to have a feature *f* and *f* cannot be said to exist in *S* unless the full account (or complete *ratio*) of *f* can be found in the *nature* of *S*. It follows from the Principle of Causal Self-Sufficiency and the fact that God is the cause of the motion or activity *within* the body qua form that strictly speaking, the motion neither belongs to the body nor really exists in it. And if internal motion (or arrangement of parts) is not really in bodies, it becomes unclear how the *nature* of the body is supposed to be constituted of matter in motion. Since God causes the nature (by activating or moving the matter), it follows from the Principle of Causal Self-Sufficiency that the motion or activity within the nature does not really belong to the nature, and hence that the nature does not strictly belong to the body. It is surely unacceptable to say that body does not *have* its own nature. Nor is it clear how the features of body that are supposed to be caused by this nature really belong to the body. According to Leibniz's mechanical physics, for example, the heat of a body is reducible to and explainable in terms of the rapid movement of the parts of the body.¹⁶ But since the cause of the motion or activity *within* the body is God, it is not clear in what sense the heat belongs to the body. Because God causes the heat by moving the matter, it would seem to follow from the Principle of Causal Self-Sufficiency that the heat belongs as much to God as to the body. In other words, it is not clear whether the heat of the fire and the shape of the shoe are in God or in the objects.¹⁷

There is good reason to believe that Leibniz discovered this problem with his original conception of substance soon after writing to Thomasius in April 1669. In fact, one of the things that makes a comparison between the two versions of the letter so interesting is that it reveals Leibniz's first reaction to this discovery. Although Leibniz articulates the source of the problem in the original letter, it is clear that he has not yet realized its full weight. At the end of that text, Leibniz describes for the first time the exact roles of God and matter in explaining corporeal features. He notes that since God is the cause of the motion within body qua form, motion is not a real being (*ens reale*) in body qua matter. He claims that "there is not motion, strictly speaking, as a real being in bodies" and that he has "demonstrated instead that whatever moves is continuously created."¹⁸ That is, ac-

16. E.g., II i 24: L 102

17. I do not mean to suggest here that Leibniz is an occasionalist. He is not. As I explained in ch. 3, he merely maintains that God is the active principle in a non-human corporeal substance whose nature, once organized, can act as the cause of another object. For a more complete account of the precise relation between God and non-human substances in the essay *On transubstantiation*, see ch. 6, sect. 3.

18. II i 23: L 102.

ording to Leibniz, body qua matter is inert stuff that would remain so, if not for the activating power of God who, by adding activity to body qua matter, produces body qua form. Interestingly enough, although Leibniz describes the precise relation between God and body qua form and thereby implies that God is the cause of its activity and hence its nature, he does not yet see the problem. He happily concludes that “this philosophy is a gift of God to this old world, to serve as the only plank, as it were, which pious and prudent people may use to escape the shipwreck of atheism which now threatens us.”¹⁹

Soon after writing to Thomasius in April, Leibniz became aware of the serious problem facing his conception of substance, and set about solving it. His solution constitutes a dramatic shift in his thinking about substance. In order to ground corporeal features properly in body and make body qua form substantial in the right way, Leibniz could do either one of two things: he could give up the Principle of Causal Self-Sufficiency and the Principle of Substantial Self-Sufficiency or he could revise his original conception of substance. A denial of his two principles would have neatly resolved the difficulty. If he had disaffirmed the Principle of Causal Self-Sufficiency, then a corporeal feature like heat could be said to belong to a body even though the *full* account of the heat could not be discovered in the nature of the body. Because, according to the Original Conception of (non-human) Corporeal Substance, the nature of a body is the cause of its features, it would follow from the denial of the Principle of Causal Self-Sufficiency that corporeal features belong to the body although the nature is maintained by God. Similarly, if Leibniz were to reformulate the Principle of Substantial Self-Sufficiency so that it was no longer a requirement of self-sufficiency that the full account of all the features be discovered in the nature of the being, body qua form could be considered a substance. In this case, it would be true that after God created and maintained the nature of body, the full account of all the features of the body would be discoverable in its nature.

If rejecting the Principle of Causal Self-Sufficiency and reformulating the Principle of Substantial Self-Sufficiency would have been a fairly straightforward way of solving the problem, revising his Original Conception of Corporeal Substance would not. Revision could take one of three forms: either Leibniz could give up mechanical physics (that is, he could deny that corporeal features are reducible to the subtle motions of matter and then, for example, revert to some form of scholastic explanatory model); or he could reject his version of Aristotelian substance in favor of some other, wholly different account; or, finally, he could try to find another way to reconcile mechanical physics with his Aristotelian Metaphysics of Substance. The alternative that Leibniz chose in 1669 reveals a good deal about his philosophical priorities: he decided to revise his Original Conception of Corporeal Substance rather than retract his commitment to either substantial or causal self-sufficiency. And the fact that Leibniz chose to attempt another reconciliation

19. II i 24: L 102.

of mechanical physics and Aristotelian substance bears witness to his honest desire to combine these two philosophies. In short, after Leibniz discovered the problem with his theory of substance, he tried to solve it while remaining consistent with mechanical physics, the Principle of Causal Self-Sufficiency, and the Principle of Substantial Self-Sufficiency. The ultimate result is his Second Theory of Corporeal Substance, whose first expression we find insinuated in the preface to Leibniz's edition of *Nizolio*.

In order to solve the problem facing his Original Conception of Substance, Leibniz had to find a way to reconstruct the nature of substance: that nature had to be made properly self-sufficient and it had to constitute a complete *ratio* of its features. There were two difficulties to overcome. First, Leibniz had to find a way to give each substance its own principle of activity so that its nature would have the cause of its motion or activity *within* it. Because, according to Leibniz, only something incorporeal and mind-like could be a principle of activity, he had to find a way to give each body its own incorporeal principle. Second, he had to find a way to make this incorporeal principle a part of the *nature* of the corporeal substance. If the active and passive principles were not unified into an integrated whole, the problem with the original conception would remain: the motion or activity within the body qua form would belong only to its active source and not to the substantial nature. That is, given the Principle of Causal Self-Sufficiency, the complete *ratio* for the nature of a corporeal substance S must be found in (some combination of) its constituents: if either one of its two principles were solely responsible for the substantial nature, then the original problem would remain.

Leibniz had his work cut out for him. In order to reconstruct the nature of substance so as to meet the newly discovered requirements of the Principle of Substantial Self-Sufficiency and Principle of Causal Self-Sufficiency, he first had to decide on an incorporeal or mind-like principle to put into body or corporeal substance, and he then had to devise a way of unifying that principle with the passive principle so as to make a single nature with it. There is wonderfully straightforward evidence that Leibniz's development took exactly these steps for precisely these reasons, that is, that he discovered the problem with his Original Theory of Corporeal Substance, decided to solve it by giving each corporeal substance its own principle of activity, and then worked out the details of how exactly to construct a substantial union out of the active and passive principles. Let's now consider his first response to the problem.

2. Letter to Thomasius revised

As I have noted, the actual additions and deletions in the second version of the letter to Thomasius are few, but they represent a fundamental shift in Leibniz's views about substance. There are four important changes.²⁰ Al-

20. Although in his edition of Leibniz's 1670 letter (VI i 162–174), Gerhardt notes some of

though none of these by itself constitutes hard proof of a radical transformation in his conception of substance, as a group they strongly suggest that by late 1669 Leibniz had decided seriously to rethink his ontology. Before turning to Leibniz's additions and deletions, let me make my strategy concerning them perfectly clear. While I am aware that each of the changes that Leibniz made to the text can be interpreted in more than one way, I have chosen not to indulge in alternative readings. Besides the desire to avoid the tedium of the latter, the interpretation that I offer of the revised letter to Thomasius is confirmed by a number of related texts discussed in sections 3 and 4. In other words, the full evidence for my reading of these changes is strewn throughout the remainder of this chapter.

Let's now consider each of these changes in turn. The first, an addition to the published version, occurs in the context of a distinction Leibniz makes between primary and secondary forms, that is, between God and body *qua* form. Leibniz writes in 1669:

Matter is devoid of motion in itself [per se]. Mind is the principle of all motion as Aristotle rightly saw. . . . For form is indeed the cause and principle of motion, but not the primary one. . . . I admit therefore that form is the principle of motion within its own body, and that body itself is the principle of motion in another body. But the first principle of motion is the primary form, which is really abstracted from matter, namely mind. . . . Therefore, it is not absurd that of the substantial forms only mind should be designated as the first principle of motion.²¹

Leibniz claims that mind is "the principle of all motion" and that form "is the principle of motion within its own body." In chapter 3, I discussed the apparent problem with this: on the one hand, Leibniz is quite explicit about the fact that "form is nothing but *figura* [an arrangement of parts of matter],"²² while on the other he insists that "form is the principle of motion within its own body."²³ As I explained, the solution to the problem is that once God creates and maintains the form as *figura* (that is, as an arrangement of parts of matter), it has a nature that is extended and impenetrable. This nature can itself cause motion in the sense that when it is struck, it will move, and when it strikes another body, it will move that body. Leibniz can claim on this basis both that "mind is the principle of all motion" and that once "mind supplies motion to matter," body (the result of activated matter) is itself a principle of motion.

the revisions in the original letter, his list is incomplete in two ways. First, Gerhardt's text does not note the additions that Leibniz makes in the second version of his letter. Because Gerhardt includes the additions in the text without any acknowledgement that they are additions, it is impossible to tell exactly what Leibniz has added to the original letter. Second, Gerhardt's list of the deletions from the original is incomplete. The fact that Gerhardt was working from a draft of Leibniz's letter (which could have had other versions before publication) and not from the published version probably accounts for at least some of the mistakes. For Gerhardt's two most significant omissions, compare G VI 1 72, ln 20, with II i 22, ln 27, and VI ii 442, ln 8; and G VI 1 64, note, with II i 15, ln 28, and VI ii 434, ln 17.

21. II i 20: L 99. 22. II i 17: L 95. 23. II i 20: L 99.

But this solution gives rise to the more serious problem posed earlier: if God or divine mind is the first principle of motion and in that sense supplies matter with the activity or motion that is *within* it, then it would seem to follow from the Principle of Causal Self-Sufficiency that body in fact cannot strictly be said to have its *own* principle of activity or motion. Leibniz's distinction between body qua matter and body qua form helps to illuminate the seriousness of the problem in the present context. As I explained in chapter 3, the key to the distinction between body qua matter and qua form is that the latter has motion while the former does not: body qua matter is nothing other than extension, inert stuff with no principle of activity, while body qua form is supposed to have motion insofar as it is a *union* of the active and passive principles. In the passage just quoted, Leibniz claims that body qua form is a principle of motion, and the strong suggestion is that it somehow acquires this status because God creates and maintains it. But of course this leads to the question as to how motion is supposed to belong to body given that the cause of the activity or motion *within* the body is God. It is difficult to grasp how motion is supposed to be a principle in body when it does not strictly belong to body. This tension in the original version of the text indicates that in April 1669, Leibniz has neither analyzed exactly how motion belongs to body qua form nor seriously considered precisely how body is a principle of motion. It would seem that in April 1669 he is only beginning to think through the details of these issues.

Sometime after April 1669, Leibniz must have realized that if the nature of body is such that motion is not strictly *within* it, then it does not make sense to say that body *has* a principle of motion. The addition that Leibniz makes to the end of the passage just quoted is interesting because it acknowledges the fact that body, *in itself*, does *not* have a principle of motion. He adds: "Indeed, Aristotle, as I have said, considers it certain that no body has a principle of motion in itself alone."²⁴ Leibniz seems to have realized that because the motion in body qua form comes from God, even body qua form cannot be said to have its *own* principle of motion. It is also noteworthy that Leibniz's wording here is consistent with the belief that body may have a principle of motion through something else. He will soon tell us what.

The second significant revision is also an addition to the original text. Leibniz claims in his original letter to Thomasius that nothing is needed to explain phenomena besides mind, matter, space, and motion. According to Leibniz:

the human mind indeed can imagine nothing other than mind . . . , space, matter, motion and what results from these related among themselves [ex his inter se com-

24. Compare II i 20, ln 34 with VI ii 440, ln 20: L 99. The Latin in the latter is "corpus nulum in se solo principium motus habere." The fact that the addition here is presented as a position of Aristotle's should not be taken to indicate that it is not also a position Leibniz accepts. As I noted in ch. 1, Leibniz often takes a reference to Aristotle to constitute its own kind of rhetorical argument: his reference to Aristotle here is probably supposed to persuade the reader of the truth of the claim.

paratis]. . . For who can imagine a Being that partakes in neither extension nor thinking [cogitationis]?

The revision occurs in the sentence that follows. Whereas in 1669, Leibniz asks: “what need [is there] to posit the incorporeal souls of beasts and plants, the substantial forms of elements and metals devoid of extension?” in the published version he adds thought (*cognitio*) to extension and thereby asks “what need [is there] to suppose the incorporeal souls of beasts and plants, the substantial forms of elements and metals devoid of extension *and thought?*”²⁵ The addition suggests that Leibniz is adding thought to extension as an element out of which objects may be made. Although it is not yet clear from the text that we are justified in assuming that there is an underlying subject or incorporeal thing that *has* thought in the same way that there is a subject or corporeal thing (namely, body) that has extension, it soon will be. In other words, Leibniz seems to be adding significantly to his ontology.²⁶

But let’s be clear. Prior to the revised version of the letter to Thomasius, Leibniz limits the list of incorporeal principles to human mind and God. As he writes in *On transubstantiation*, “the substance of the human body is union with the human mind; and the substance of bodies which lack reason is union with the universal mind, or God.”²⁷ In brief, before the revisions, there are two kinds of incorporeal beings: God and human mind. The former constitutes the substance of non-human bodies, the latter the substance of human ones. In the revised letter to Thomasius, Leibniz seems to add to the list of incorporeal principles. The new principle is something that can have thought. Leibniz now seems to believe that in the same way divine mind creates (and sustains) human minds which, once created, are separate from their divine cause, so God could create (and sustain) some other sort of incorporeal principle that (somehow) has thought and which is also separate from its cause. In short, Leibniz’s second addition to the letter suggests that there is an incorporeal principle that is distinct from both divine and human minds and that (somehow) thinks.

It would be easier to grasp the full significance of Leibniz’s addition if we could describe the nature of divine and human minds in the earlier writings and then compare them with what Leibniz says about thought (*cogni-*

25. The whole sentence reads in Latin: Quis enim imaginari sibi potest Ens quod neque extensionis neque cogitationis sit particeps? quid opus igitur animas brutorum, plantarumque incorporeas, formas elementorum, metallorumque substantiales, extensionis expertes ponere? The Latin is less than obvious, and it is noteworthy that the term ‘cognitio’ can mean knowledge. But, as Daniel Garber pointed out to me, the context demands the translation given here. In short, against the scholastics, Leibniz argues that there is no reason to posit the existence of entities like the incorporeal souls of plants and the substantial forms of elements. The important part of the revision, here placed in italics, appears in the last phrase of the original: formas Elementorum [,] Metallorum substantiales extensionis *et cognitionis* expertes, ponere? Compare II i 22, ln 24 with VI ii 442, ln 5: L 100.

26. I will offer further evidence for this reading in the next section.

27. VI i 509: L 116.

tio) in the revised letter. Unfortunately, no such comparison is possible because before 1670 Leibniz says surprisingly little about the nature of mind. He neither defines it nor explicitly describes its relation to body. Although Leibniz is often quite specific about the nature of body and how motion is an activity (*actio*) of that nature, he does not go into the same detail concerning mind. For example, in *On transubstantiation*, he defines precisely the essence of body and explains exactly how a variation of that essence constitutes motion. In contrast to this explicit account of the nature of body and its activity, he offers no definition of mind, and says little more than that mind “lacks extension” and that “[e]very action of mind is thinking [cogitatio].”²⁸ Nor does Leibniz tell us much more in Part II of the *Confession of nature against the atheists* where his expressed purpose is to “demonstrate the immortality of the human mind.” He claims there, for instance, that the activity of mind is thinking (*cogitatio*) in the same way that the activity of body is motion; but whereas he then describes the essence of body, he does no such thing for mind. About mind, he explains only that:

The human mind is a Being one of whose activities is thinking [cogitatio]. . . . For, thinking [cogitatio] is (1) a thing that is immediately perceptible, mind being immediate to itself when it perceives itself thinking. (2) Thinking is a perceptible thing without awareness of parts. This is clear from experience. For thinking is that something I know not what, that we perceive [sentimus], when we perceive thinking [cogitare].²⁹

In this, his lengthiest discussion about mind during the period, Leibniz displays little about the nature of mind besides the fact that thinking (*cogitatio*) is an activity of mind and hence is not distinct from it.³⁰ It is also worth noting that during the period he says less about *cognitio* (what I have been translating as *thought*) than he does about *cogitatio* (what I have been translating as *thinking*), but he always uses the term *cogitatio* to refer to the activity of mind.³¹

Because Leibniz presents so little information about mind (and even admits to a basic ignorance about what thinking as an activity of mind is), it seems clear that he has not yet worked out the details of his conception. He tells us little more than that mind lacks extension, that it has a principle of activity, and that the activity of mind is thinking (*cogitatio*). Moreover, because Leibniz’s comments about mind prior to the revised letter to Thomassius are restricted to human and divine minds, and because he does not pos-

28. VI i 509–10: L 116. 29. VI i 492–93: L 113.

30. In ch. 6, sect. 2, I analyze some of Leibniz’s early comments about the actions of mind in order to show the Platonist underpinning of his conception of mental activities. The conclusions of that discussion are not relevant here.

31. I do not mean to suggest that these are the only senses of the terms. As one would expect, given the vagaries of such terms in the seventeenth century, Leibniz uses *cognitio* and *cogitatio* in slightly different ways throughout the period. I am also not denying that prior to the revised version of the letter, Leibniz sometimes uses *cognitio* to mean something like thought (see, e.g., VI i 229, 277; VI ii 5). My claim rather is that before late 1669, Leibniz does not postulate thought as something that might be a constituent of entities.

tulate the existence of thought (*cognitio*) or any other kind of incorporeal principle, there is no reason to believe that before late 1669, Leibniz takes there to be an incorporeal principle (or kind of mind) distinct from the divine and human.³² In short, when Leibniz adds thought to extension as an element out of which entities can be made, he seems to be proposing a position that is different from his earlier view and that claims that there is an incorporeal principle that is (somehow) distinct from both divine and human minds.

The two final changes in Leibniz's original text occur towards the end of the letter, in the midst of Leibniz's discussion of the motion in body. They offer corroborating evidence that thought is to be taken as a third kind of incorporeal principle. As I explained in chapter 3, at the end of the April 1669 letter to Thomasiaus, Leibniz presents a version of the Principle of Causal Self-Sufficiency and discusses the relation between motion and body. The final revisions that he makes are especially important because they represent a dramatic change in the role assigned to God and hence in the relation of mind to body. Some of the most important features of that relation have changed in the revised version. In the April 1669 letter, Leibniz writes:

From these things it follows that *the nature of Body is constituted by Extension and Antitypy*, and since there is nothing in things without a cause [causa], by all means nothing ought to be supposed in bodies whose cause cannot be presented by their first *constitutive principles*. But the cause cannot be presented by these unless through their *definitions*. Therefore nothing should be supposed in bodies which does not follow from the definition of extension and antitypy. But from these follow only magnitude, figure, situation, number, mobility, etc. Motion itself does not follow from them.

In revising the letter, Leibniz decides to place this last statement and what he adds to it within parentheses. The final version reads: "(Motion itself does not follow from them, from which it follows that indeed no bodies will have motion unless from incorporeal principles.)"³³ Thus, Leibniz has come to believe that bodies will have motion only if there are incorporeal things (presumably incorporeal principles) that give it to them. The plural

32. Leibniz is silent as to whether or not animals have minds. The only thing close to an incorporeal principle (other than human and divine mind) mentioned by Leibniz prior to late 1669 is the "Idea of divine mind" as presented in *On transubstantiation*. In this essay, he develops the view that corporeal substance is a union of body and divine mind, and he suggests that it is an Idea in God's mind that concurs with body: "Idea is the union of God with created things" (VI i 509: L 116). He explains that "the divine mind consists of the Ideas of all things," that "the Idea of a thing A is one thing, the Idea of B another," and that the "substance of each thing is not so much mind as it is an Idea of a concurrent mind" (VI i 511-12: L 118). I will discuss the relation between God and non-human substances at length in ch. 6, sect. 3. As I show, the Idea is not an incorporeal principle which has a principle of activity that is distinct from God's mind.

33. *Motus ipse ex iis non fluit, unde nec corpora motum habent nisi ab incorporeis*. Compare II i 23, ln 32 with VI ii 443, ln 18.

here (*incorporeis*) suggests that there is more than one principle, and the suggestion is that there is (at least) one principle for each body. Leibniz seems prepared in the published letter to propose that, for each body, there is at least one incorporeal element that acts as its principle of motion. It seems reasonable to assume that each incorporeal principle is to be understood as the subject or bearer of thought (*cognitio*).³⁴

It follows from the fact that each body has one (or more) incorporeal principle that God is no longer the direct cause of the motion in body because the incorporeal principle will have acquired the role previously assigned to God. This is exactly what Leibniz's final significant revision of the letter implies. In the published version, Leibniz deletes the following passage:

Hence, strictly speaking, motion does not belong to bodies, as a real being [ens reale] in them, but as I have demonstrated, whatever moves is continuously created and bodies are something at any instant in assignable motion, but are nothing at any time midway between the instants of motion – a view that has never been heard of until now but which is clearly necessary and will silence the atheists.³⁵

By deleting the passage, Leibniz retracts two closely related assertions: that God continuously creates bodies and that motion does not belong to bodies as a real thing (*ens reale*).

The cumulative effect of these four changes is significant. As a group the revisions do not constitute an explicit statement of Leibniz's new conception of substance, but they do reveal that by late 1669, Leibniz had begun to construct a conception importantly different than the earlier one. He still maintains both that something incorporeal is the cause of motion in body and that body has a principle of motion, but he has withdrawn the claim that God is the sole incorporeal cause of activity in non-human corporeal substances. That is, God no longer plays the role of the principle of activity within body qua form.

Nor is it surprising that Leibniz offers so few comments in the revised version of the letter about his new conception of substance. There are at least two good reasons for not changing the letter so as to include a full account of his new views. First, it is virtually certain that Leibniz had not yet worked out the details of his second conception. As I will show in the next sections, his Second Theory of Corporeal Substance took some time to construct. While he may have known in late 1669 what the general features of those changes had to be (for example, that each body had to have its own incorporeal principle), it would take time to devise a coherent theory of substance that solved all the relevant problems. Moreover, as I suggested in chapter 3, the goal of the letter as an addendum to the preface of his edition of Nizolio was as much methodological as it was metaphysical. Leibniz in-

34. Again, the next section contains confirmation of this interpretation.

35. Compare II i 23–24 with VI ii 443, ln 19. To my knowledge, previous commentators have not recognized the differences between the two versions of Leibniz's letter, except for Daniel Garber who was the first to notice this final revision. See his "Motion and Metaphysics," 171.

tended not so much to convince his readers of the details of his account of substance as to show them the plausibility and value of a conciliation between the metaphysics of Aristotle and the physics of the mechanists. As noted in chapter 3, the title that Leibniz gave his letter in his preface bears witness to this claim: he names the piece “Letter to a man of the most refined learning, Concerning the Reconcilability of Aristotle and the Moderns.”³⁶

In this chapter, I have displayed the problem with Leibniz’s Original Theory of (non-human) Corporeal Substance and argued that as soon as he discovered the problem, he began to remake the nature of things drastically. The revisions made on the April 1669 letter to Thomasius indicate Leibniz’s very first reaction to the problem as well as what form his solution would take. They reveal a good deal about his most basic philosophical inclinations: he chose to retain the Principle of Substantial Self-Sufficiency, the Principle of Causal Self-Sufficiency, the mechanical physics, and the basic structure of an Aristotelian conception of substance at the cost of having to revise his ontology. It would take time for him to reconstruct his original notion of substance so that it could meet the full demands of the Principle of Causal Self-Sufficiency and Principle of Substantial Self-Sufficiency. But it is significant that by early 1670, he had already hit upon the basic change he would have to make in his original conception: he would have to replace the role assigned to God in the original account with an incorporeal principle that could somehow be part of substance.

3. Development of a perfect union

At some point in late 1669 or early 1670, Leibniz began to revise his Original Theory of (non-human) Corporeal Substance so as to make it self-sufficient in the appropriate way. As I noted in section 1, in order to solve the problems facing the original conception, Leibniz needed to achieve two distinct goals: he had to find a way to give each corporeal substance its own principle of activity so that its nature could be the independent source of its own activity and hence the source of its features, and he had to envisage a way to integrate this principle of activity into the nature of the substance. In this section and the next, I consider the steps that Leibniz took to solve these problems. The textual materials of these sections also constitute evidence of the interpretative claims made in the preceding one about the changes to the April 1669 letter to Thomasius.

In 1669–70, Leibniz wrote another essay for his *Catholic demonstrations* which he entitled *On the incarnation of God or on hypostatic union* and in which we find the first explicit revision of his Original Theory of Corporeal Substance.³⁷ In this essay, Leibniz faces the problem of hypostatic

36. VI ii 399.

37. The editors of the Academy edition assign this essay to the period 1669–70 (see VI i 532). On the basis of the content of *On the incarnation of God* and its relation to other essays for which we have more definite dates, it seems likely that it was written before 1670. For ex-

union, here understood to be the problem of how there can be a union of the divine and human natures of Christ in one substance.³⁸ Given Leibniz's philosophical concerns at the time, the theological problem of hypostatic union seems an especially appropriate context for a discussion of how the active and passive principles (or mind and body) are to be related in corporeal substance. That Leibniz broaches the topic of their relation in this context is significant in two ways. First, it is clear that he considers the question about the relation between the mind and body in a corporeal substance to be similar to the one concerning the unification of the divine and human natures of Christ. That is, he takes both questions to reduce to the same thing: how can two things with different natures be unified in one substance? Second, his attempt to answer these two questions at the same time displays one of the underlying methodological assumptions that I attributed to him in chapter 1. In my discussion there of his *Metaphysics of Method*, I suggested that Leibniz assumed an underlying truth beneath the conflicting philosophical schools that would be consistent with Christian doctrine. By treating the pressing metaphysical problem about the nature of a corporeal substance in the context of this grand theological one, he is hoping to penetrate to the "underlying truth" that will offer the key to the solution for each. Leibniz appears to have thought that the answer to his question about substance would be found within the truth of the theological doctrine. As a philosopher interested in resolving the tensions between his Aristotelian assumptions and his Original Theory of Corporeal Substance, Leibniz might reasonably have tinkered with the details of his views in isolation from his other philosophical and theological projects. There are neither essays nor letters that suggest any such thing. Rather, he chose to treat his newly discovered problem within the severe metaphysical restrictions posed by the theological doctrine of the incarnation. What he intended to do was to construct a theory of substantial union that would both explain the theological

ample, because N. 38.4 (VI ii 17off) contains the notion of *conatus* while *On the incarnation of God* (N. 18 (VI i 532ff)) does not, the latter was almost certainly written before text 38.4, which we know was composed in the winter of 1669–70. Given the obvious importance of *On the incarnation of God*, it is striking that there seem to be no scholarly treatments of the essay, neither by commentators of the early works (e.g., Kabitz, Beeley) nor by those scholars who are keen to analyze Leibniz's theology (e.g., Adams, Rutherford), nor by those commentators interested in describing Leibniz's development (e.g., C. Wilson, Robinet). This is especially odd since Kabitz calls attention to the text by including most of it in the Appendix of his book. See *Die Philosophie des jungen Leibniz*, 150–53.

38. The term 'hypostasis' has a long and varied history, but has generally been taken to mean substance, nature, or suppositum. In Christian theology, the most common problem of hypostatic union was that of the union in Christ of two natures, one divine and one human, although the term is also related to the doctrine of the trinity, where the question is how one substance is able to be three persons or have three natures. Although the title of the essay suggests otherwise, Leibniz seems more interested in the problem of the trinity here than with that of the incarnation. In fact, the general theological concern is with the relation between God and creatures, and most of this relatively short essay focuses on the metaphysical issues that concern the relation between the active and passive principles in a substantial nature.

doctrine and solve the difficulty facing his Original Theory of (non-human) Corporeal Substance.

Leibniz begins his essay about the incarnation of God with a list of the things that “are able to be unified hypostatically.” They are:

1) God and mind, 2) Mind and Body, 3) Body and Body through a common mind. Body and Body are not able to be unified in themselves hypostatically, because no Body subsists in itself. Mind and Mind are not able to be unified hypostatically, unless as perfect and imperfect because imperfect mind [i.e. created mind] does not act outside of itself unless through Body. . . . Moreover, created Mind . . . is not unified with every body, but just with the one in which it has been rooted and from which it cannot be separated. E.g. In the human body it should not be thought that the soul is unified hypostatically with all the little bodies which are in it, because they change perpetually, but [the soul] inheres in the center of the brain with a certain fixed and inseparable flower of substance, most subtly mobile at the center of the animal spirits, and [the soul] is unified substantially so that it may not be separated by death.³⁹

Leibniz makes five claims in this passage that are especially relevant to my present concerns. They are:

- (1) if x and y are unified hypostatically, then either x or y subsists per se;
- (2) created mind cannot act outside itself except through body;
- (3) if x and y are unified hypostatically, then either x or y acts outside itself (through the other);
- (4) every created mind has a body to which it is unified hypostatically;
- (5) created mind is unified hypostatically with a body if and only if it is rooted in that body and cannot be separated from it.

Leibniz continues his essay by asserting the following:

- (6) “there is no hypostatical union except by means of the activity of the one on the other;”
i.e., if x and y are (presently) unified hypostatically, then one is (presently) acting on the other;
- (7) minds “have in themselves a principle of acting;”
- (8) “every action [of God] on body is one of creation;”
- (9) x and y are unified hypostatically if and only if (a) “one of them acts constantly by a special *ratio* of action [actus] on the other” and (b) “one of them is the other’s immediate instrument of acting.”⁴⁰

39. The Latin in the latter part of this passage reads: Porro Mens creata . . . non unitur omni corpori, sed ei tantum in quo radicata est, et a quo separari non potest. V.g. in Corpore humano non putandum est animam omnibus quae in eo sunt corpusculis hypostatice uniri, cum perpetuo transirent, sed in ipso centro cerebri flori cuidam substantiae fixo et inseparabili, subtilissime mobili in spiritum animalium centro inhaeret et substantialiter unitur ita ut nec morte separaretur (VI i 533).

40. VI i 533–34.

Leibniz uses (8) and (9) to argue that God and body are not substantially unified. He explains that because God acts on bodies “by creating,” it follows that bodies “are not united with God” beyond the moment and therefore that neither of the conjuncts in (9) apply to God’s relation to body; that is, God does not constantly act on body in the required sense and body is not God’s immediate instrument of acting.⁴¹

But there is an apparent problem here. In the previous section, I noted that in the revised version of the April 1669 letter to Thomasius, Leibniz withdrew his assertion about the continual creation of bodies by God, and I claimed that the deletion of that passage marked a significant shift in Leibniz’s view about the activity of God in the natural world. Yet in *On the incarnation of God*, Leibniz asserts that God continually creates bodies. He writes: “Because there is no hypostatic union except by means of the activity of the one on the other, God is not able to act on bodies in any other way (annihilation and creation excepted) than by impressing motion. Moreover, while bodies are being moved, they are continually being created, as was demonstrated by me.”⁴² What are we to think? The crucial questions are: does the divine mind do the moving or not, and is the mind the principle of activity in the body or not?

Because Leibniz is discussing for the first time some extremely difficult theological topics in these notes on hypostatic union and because he has been forced to rethink his original conception of the relation between God and bodies, we should not be surprised to find him struggling to clarify his views about the precise relation between God and bodies. As he proclaims at the outset of his discussion of that relation: “it must be investigated whether or not God is hypostatically unified with all bodies, that is, to the whole World, [and] whether [God] is able to be unified with something or with nothing.”⁴³ In response to this demand, Leibniz announces that the divine mind is not hypostatically united with bodies exactly because the created minds – and not God – supply the constant activity in bodies. Once we understand that God creates but does not move bodies, it is easy “to discern the distinction between the action of mind on Body and [the action] of God on body.” Leibniz explains:

[Created] Mind does not act on body by creating, but by moving; God creates. In turn, God does not act on bodies except by creating. However, whatever creates acts on the thing, [but] does not act by means of the thing and so the thing is not its instrument of acting. For truly the instrument of God is Mind, unified with God by means of which God acts on bodies other than by creating.⁴⁴

God is hypostatically unified with created minds: the perfect mind acts constantly on the imperfect ones so that each of the latter is God’s “instrument.”⁴⁵ God is not, however, hypostatically unified with bodies: al-

41. VI i 533. 42. Ibid. 43. Ibid. 44. VI i 534.

45. As we will see in chs. 5 and 6, divine mind acts constantly on created mind through emanation.

though God constantly creates bodies,⁴⁶ the divine mind is neither the principle of the activity in an individual body nor is the body its immediate instrument of acting. As a response to our questions about God's relation to bodies, the divine mind is not the principle of activity in body and, although the divine mind impresses motion on body, it does so through or by means of its instrument. The distinction between body qua matter and body qua form may be helpful at this point. Leibniz's suggestion in *On the incarnation of God* is that, while God keeps the *res extensa* or extended stuff in existence through continual creation, created mind takes that matter, acts constantly on it, and thereby maintains a body qua form or organized arrangement of matter. Nor is that all. Besides giving each mind its own principle of activity, Leibniz also suggests in this essay that God imposes on each mind "a *ratio* of action [actus]" so that the mind may act as "the instrument" of God.⁴⁷

After presenting his arguments to the conclusion that God is not hypostatically unified with body, Leibniz thinks it prudent to describe precisely what he takes a union between created mind and body to be. His account is both a summary and clarification of some of the claims that he has made previously. He writes: "if A is [what does] the unifying and B is what is said to be unified, then (a) A is a thing subsisting per se, (b) A acts through B on C, (c) A acts immediately on B, that is, not through another."⁴⁸ With the help of this passage, it is now possible to summarize the exact relation between the active and passive principles in an hypostatical or substantial union as Leibniz articulates it in this essay. The active principle subsists per se (claim (1)), but only acts outside itself through the other; the passive principle need not subsist per se, but is the means by which the active principle acts when it acts outside itself (claim (3)).⁴⁹ Although God does not need a passive principle through which to act, created mind does (claim (2)). This means that all the activity in the natural world reduces to that of minds and bodies in hypostatic union. Moreover, it is not enough that the active principle acts some of the time, it must act constantly on the passive principle. The idea seems to be that when the acting stops, so does the union (see claims (6) and (9)). Thus, Leibniz asserts in claim (9) that x and y are hypostatically unified if and only if the active principle acts constantly on the passive principle and if the latter is its "immediate instrument" of acting. By such means, we have arrived at

46. In fact, Leibniz seems genuinely undecided about how to describe the relation between God and bodies. At one point, he writes about the creation of bodies by God: "but in a way he creates, in a way he does not." See VI i 533.

47. Notwithstanding the fact that minds are instruments of God, Leibniz insists that minds (at least human minds) are "free." See VI i 533.

48. VI i 534. I have substituted lower case letters in place of the numerals Leibniz uses in this passage in order to distinguish the claims he makes from the ones I have listed above.

49. In order to keep to our point, I am skirting some of the comments that Leibniz makes in the text, which are directly relevant to the hypostatic union of Christ. See the texts for those details.

two of Leibniz's most basic assumptions about the active principles in nature, namely, that an active principle acts constantly and moreover that it only acts outside itself through its passive principle. I will return to these points later.

In the remainder of *On the incarnation of God*, Leibniz says more about the relation between the active and passive principles (that is, between the mind and body) in a corporeal substance. While God and bodies "are not properly unified,"⁵⁰ he clearly wants to maintain that minds and bodies are. There is, however, a problem. As Leibniz explains, "the difficulty is, as we said above: there is no union between mind and body except through the action [actio] of the one on the other, but in truth there is no action except through the impression of motion. Therefore, there will be no union except through the impression of motion."⁵¹ In other words, Leibniz presents here another version of claim (6), except that in this case he emphasizes the fact that *x* and *y* are hypostatically unified only if one of them is impressing motion on the other. Whereas (6) states that there is an hypostatical union only if *x* acts on *y*, Leibniz now claims that *x* and *y* are unified only if *x* impresses motion on *y*. The difficulty arises from the fact that according to (6) and (9), an hypostatical union between *x* and *y* requires a constant motion of the one on the other, and it is unclear how mind is supposed to impress motion constantly on body. Leibniz's solution seems odd. At this point in the text, he both admits that mind does not constantly act on body and appears not to think that this is a serious problem. Rather, he notes: "although mind does not continually act on body, nevertheless it thinks [cognoscere]."⁵² Leibniz goes on to explain that "there is no thought [cognitio] without a union because to make itself thought is the action of the one on the other."⁵³ Thus, according to Leibniz:

- (10) created mind always thinks (*cognoscere*);
- (11) thought (*cognitio*) requires a union because "to make itself thought" is the action of the one on the other (i.e., the formation of a thought requires an action of mind on body);
- (12) therefore, created mind must always be hypostatically unified with its body.

Claims (10) through (12) are enormously important. Before we unpack their implications, let's resolve the difficulty at hand. On the one hand, Leibniz says that mind does not constantly act on body which, given (9), implies that mind and body are not correctly unified. On the other, he now maintains that mind always thinks, and that thought is "an action of the one on the other," which seems to entail that one of them *does* always act on the other. But if mind constantly acts on body insofar as it always thinks, why then does Leibniz deny the constant activity of mind on body? Things become even more confusing when we recall that he begins his discussion of this issue

50. VI i 533. 51. VI i 534–35. 52. VI i 534. 53. VI i 534–35.

(see the long quotation cited in note 51) by asserting that *x* and *y* are unified only if *x* impresses motion on *y*. It is reasonable to assume that while impressing motion entails acting, acting need not entail impressing motion: *x* could act on *y* in a way that does not involve impressing motion. Thus, when Leibniz denies constant action of mind on body, it would seem that he is also denying that mind constantly impresses motion on body. One way out of this difficulty is to reject the assumption that *x* impresses motion on *y* only if *x* acts on *y*. But how can this be? It is possible that when Leibniz denies that mind acts continually, he is *not* also denying that mind constantly impresses motion. That is, perhaps we are supposed to take thinking to be a form of impressing motion in which case mind constantly impresses motion on body although it does not continually act. One reasonable way of making sense of such a distinction between acting and impressing motion is to take Leibniz to mean that mind is not always acting on body in the sense of *willing* actions, but that all thought requires some (non-volitional) interaction.⁵⁴ There are two advantages in attributing such a position to Leibniz: first, it makes sense of Leibniz's otherwise baffling remarks (e.g., that impressing motion is not a form of acting); second, it seems true. That is, it is believable that although a mind is not always willing actions, it may constantly be thinking, and hence constantly interacting with the body.

Nor does Leibniz sort these matters out. At this point in the text, he asks several rhetorical questions about how the mind and the body are related through thought, but his responses throw little light on the serious issue at hand. Besides restating his claim that "there is no thought [cognitio] without a union,"⁵⁵ he offers few clues as to how minds either act or impress motion on bodies. After skirting the real issue at hand, he ends his essay with an exclamation: "Amazing. But few – except the most subtle – will grasp the secrets of such things."⁵⁶

The imprecision of the essay's conclusion should not detract from its overall significance. Leibniz's pronouncements in *On the incarnation of God* represent nothing less than the foundations of a new conception of substance. By so clearly focusing on the necessary conditions for an hypostatic union, the essay squarely faces the problem with the Original Theory of (non-human) Corporeal Substance. It also contains Leibniz's original attempt to articulate what will become some of his most basic assumptions about substantial activity, substantial unity, and mind. Before turning to these new and provocative assumptions, let's consider the success of the essay as a solution to the problems facing the original conception.

I claimed in section 1 that in order to solve the problem with his Original Theory of Corporeal Substance, Leibniz had to find a way both to give each substance its own active principle and to make that principle part of the *nature* of the substance. I explained that if the active and passive principles were not unified into a single nature, the problem with the original concep-

54. I owe this way of taking the distinction to Margaret Wilson.

55. VI i 535. 56. Ibid.

tion would remain: the substantial feature would belong only to the active principle that directly caused it and not to the substance. *On the incarnation of God* represents significant progress toward the resolution of exactly these difficulties. According to the Principle of Causal Self-Sufficiency, a feature *f* will belong to a substance *S* if and only if the full account of *f* is found in the nature of *S*. The crucial flaw with the Original Theory of Corporeal Substance was that the cause of the motion within body qua form (namely, divine mind) stood outside it and hence remained substantially distinct from the corporeal nature. The key to Leibniz's new position is that he inserts created mind between God and body, so that mind can act as God's "instrument." But how exactly is this supposed to work? There are two features of mind that help it succeed at its assigned task. According to Leibniz, each individual created mind has its own principle of activity (claim (7)) and its own "special *ratio*" (claim (9a)). That is, the active principle or mind in a corporeal substance is a fundamentally active thing with its own set of instructions or "special *ratio*" by means of which it acts. We will return to these points below.

Nor is it problematic that mind, the incorporeal principle in the corporeal substance, is the cause of the activity and organization within the body. Leibniz has constructed the substantial union between the principles so that for any feature *f* of the corporeal substance *S*, *f* results from the organization of the passive principle in *S* and moreover this organization occurs if and only if the active principle acts through the passive principle. While the mind is the source of activity, the body is what mind organizes: each is necessary and both are sufficient for the corporeal feature *f*. By combining mind and body in this way, Leibniz has cleverly managed to create a single unit out of active and passive principles. His strategy is straightforward: a real substantial union between the principles depends on the constant activity of the one on the other because the constancy of the union of the two depends on the constancy of the connection between them. Since the two principles will cease to be a union when they cease to be connected and since constant activity assures constant connection, Leibniz's account of substantial union requires constant activity. In other words, the hypostatic union of the principles critically depends on two features of mind: that mind constantly acts and that each mind cannot act outside of itself except through the body in which it is rooted.

A comparison with organic unities may be helpful at this point. If one understands an organic unity to be composed of substantial form and matter, then it is easy to see why unity requires constant activity: if the activity involved in maintaining the organic unity stops, so does the unity. We would generally agree that when the maintenance of the organization ceases (e.g., the heart stops, the liver no longer functions), the unity of the substantial form and matter does so as well (e.g., the entity dies, the formerly organized body becomes a heap of decaying flesh). This account of substantial unity is nicely consistent with Leibniz's proposal about the relation between God and bodies: the form takes the body qua matter that

God continually creates and, by acting on that matter, out of its own principle of activity, the form produces and maintains the organic unity. The nature of organic unities also helps us to understand what Leibniz means when he says that the active principle cannot act outside itself except through the passive: in order to act externally, the source or cause of the organization has to act through the passive principle that it organizes.

The significance of *On the incarnation of God* is clear. Its account of substantial unity constitutes an important first step in the development of Leibniz's Second Theory of Corporeal Substance. By giving each active principle a set of instructions and by permanently connecting each active principle to a passive principle through which it always acts, Leibniz has formulated a genuine unity of incorporeal and corporeal elements whose composite is both substantially and causally complete. But the importance of Leibniz's *On the incarnation of God* goes well beyond the success of its solution to the problems facing the Original Theory of Corporeal Substance. The essay also displays a number of metaphysical ideas that will evolve into core features of Leibniz's mature thought. In order to be perfectly clear about the importance of the issues at hand, let's review and summarize.

There are several points to emphasize about *On the incarnation of God*. It will prove important to the discussion of matter in chapter 7 that until the second half of 1670, Leibniz is committed to material passivity. Although during the period 1668–70, Leibniz changes the details of his account of body, he does not waver from the view that a substantial nature is constituted of an active principle and a passive principle where the latter, before union with the former, is body qua matter or passive extended stuff. According to Leibniz, there is nothing in passive extended matter that can function as a source of activity. However, once that stuff is joined with its active principle, it becomes an organized arrangement of parts (that is, a body qua form) that can interact with other corporeal substances. The role that Leibniz assigns to body in *On the incarnation of God* is consistent with this account: although body qua matter does not have in itself a principle of activity, it acquires one from mind and, as claim (9) announces, thereby becomes mind's "immediate instrument of acting." Mind takes brute passive stuff and turns it into an active, corporeal substance.

During the period 1668–70, although Leibniz remains firm in his views about material passivity, he radically changes his views about substantial activity. In the early theological essays and in the 1668–69 letters to Thomasius, God is the principle of activity in a non-human corporeal substance. However, by the time Leibniz revised the April 1669 letter to Thomasius and composed *On the incarnation of God* (i.e., in late 1669 or early 1670), he has greatly restricted God's role and populated nature with incorporeal active principles. According to Leibniz in his discussion of hypostatic union, when God acts on bodies, the activity is one of creation and not one of impressing motion. On the basis of the evidence of the revised letter to Thomasius and *On the incarnation of God*, it is clear that by early 1670,

Leibniz intended to reconstruct the active principle in corporeal substance. Since for Leibniz (and for most of his contemporaries), extended passive matter (body qua matter) could contain nothing active in itself, the assumption was that only something incorporeal could function as a source of activity.⁵⁷ In the mid-seventeenth century, the two most obvious candidates available to play the role of the (created) incorporeal active principle in nature were simple mind or *res cogitans* (as assumed by the Cartesians and others) and substantial form (as assumed by some of the scholastics as well as the reformers). In keeping with his Rhetoric of Attraction, Leibniz happily uses both terms to designate the incorporeal principle in body. Although the terms ‘form’ and ‘substantial form (*forma substantialis*)’ are more frequent in the theological essays, ‘mind (*mens*)’ occurs more often in the writings on physical topics. The most likely reason for the predominance of ‘mind’ in the works on physics is that most of Leibniz’s expected readers would have been confused (if not appalled) by the use of (what they would have considered) outdated scholastic vocabulary. However, he was perfectly happy to use the more traditional terminology in his letters to more traditional philosophers and to those thinkers (like Arnauld) whom he believed to be sympathetic to his theological goals. The texts of 1668–70 provide abundant evidence that there is no distinction in Leibniz’s mind between substantial form and mind and, moreover, that each designates the active principle in corporeal substance.⁵⁸ Therefore, when Leibniz describes the activity of mind and displays the relation between mind and body in *On the incarnation of God*, he is offering thoughts about his Second Theory of Corporeal Substance.

One of the most significant implications of Leibniz’s new theory is that now the individual corporeal substances constitute the source of the activity in the natural world. Although God constantly creates them, the substances themselves are the causes of the comings and goings in that world. This is important. At the end of our discussion in chapter 2, we attributed to Leibniz the (1668) Substantial Form Assumption, according to which, for every substance S, S will have a (mind-like) substantial form that contains the principle of activity of S. In *On the incarnation of God*, although the term used is ‘mind (*mens*),’ the point is the same: as claim (7) makes perfectly clear, the mind in a corporeal substance has a principle of activity in itself. But Leibniz also adds significantly to this claim and implies that the principle of activity has been divinely constructed so as to organize its body according to a prearranged plan. As Leibniz writes in a passage that we have seen: “For truly the instrument of God is Mind, unified with God by which means God acts on bodies other than by creating;” and as he insists in (9)(a),

57. For support for this claim about activity, see the discussion in ch. 2, sect. 2 in the *Confession of nature against the atheists*.

58. See, for example, VI ii 282, 287 and II i 163, 175. In the remainder of this chapter and in those that follow, there are many examples of the ease with which Leibniz shifts from one terminology to the other, always with the same basic metaphysics in mind.

the mind acts on its body “constantly by a special *ratio*.”⁵⁹ The implication is that the active principle will act as “God’s instrument” because God has equipped it with a set of instructions that (somehow) directs its actions. What we have here is an assumption that will play an important role in the development of Leibniz’s Complete-*Ratio* Theory of Substance and the closely related doctrine of Preestablished Harmony, namely, that God constructs individual minds so that they behave in a prearranged way and thereby act according to universal harmony. A thorough discussion of this important point will have to be postponed until the historical material of chapter 5 has been presented. But it is worth emphasizing that in Leibniz’s original attempt to describe the incorporeal active principles in corporeal nature, he implies that each of these principles contains a set of instructions for how to act.

At the end of chapter 2, I discussed a difficulty that arose concerning a tension between the Principle of Causal Self-Sufficiency and the Principle of Sufficient Reason. It will be helpful to review that problem here. While the Principle of Sufficient Reason claims that for every state of affairs, there is a complete *ratio*, the Principle of Causal Self-Sufficiency asserts that a substantial feature *f* will not strictly belong to a corporeal substance *S* unless the complete *ratio* of *f* is contained in the nature of *S*. In the writings of 1668–69, it is unclear how far Leibniz intends the Principle of Causal Self-Sufficiency to extend. In the conclusion of chapter 2, I proposed the Complete-*Ratio* Theory of Substance, according to which the nature of a substance *S* contains the complete *ratio* for all its states or features. For our purposes here, it is important to recognize the radical implications of this theory: it follows from the Complete-*Ratio* Theory of Substance that the nature of *S* contains the complete *ratio* for every feature *f* of *S*, whether *f* is an action or passion of *S*. Against the background of the Complete-*Ratio* Theory of Substance, the metaphysical implications of *On the incarnation of God* shifts into clearer focus. There are two points to emphasize. First, the essay is silent about substantial passions (i.e., the features that arise from *S* being acted upon), although it implies that corporeal substances are self-sufficient, and suggests that each substantial nature contains a complete *ratio* for its actions. The second point to emphasize is that despite the elegance of its substantial self-sufficiency, the Metaphysics of Substance here does not resolve the tension between the Principle of Sufficient Reason and the Principle of Causal Self-Sufficiency. On the one hand, the Principle of Sufficient Reason seems to apply easily to this world: for every action in the world, there is an acting substance that contains in its nature a complete *ratio* for the action. On the other, there are substantial features that do not strictly belong to a substance. To return to an example used at the end of chapter 2, when Wanda spills fresh coffee grinds all over her hand, the complete *ratio* for the stain is contained partly in the nature of Wanda and partly in the nature of the coffee. While this account satisfies the Principle of Suf-

59. VI ii 533–34.

ficient Reason in the sense that there is a complete *ratio* for the stain, it does not satisfy the Principle of Causal Self-Sufficiency: since the *ratio* for the stain is not contained in Wanda, it remains unclear to whom or what the stain belongs.

But that's not all. In *On the incarnation of God*, Leibniz makes a number of provocative points about the relation between the active and passive principles. One of the additions that Leibniz made to his letter to Thomasius of April 1669 involved an apparent change in his ontology. As explained in the last section, Leibniz added thought (*cognitio*) to extension as an element out of which things can be made. I interpreted the addition to imply that at the time Leibniz revised his letter for publication, he was prepared to add a new type of incorporeal principle to the world, namely, an incorporeal principle that could think and function (somehow) as the principle of activity in bodies. In *On the incarnation of God*, Leibniz confirms this point and goes well beyond it. Not only does he give each corporeal substance its own mind that is inseparably attached to a body, he makes the provocative claim that minds think constantly. According to Leibniz, when a mind thinks (*cognoscere*), it produces a thought (*cognitio*) that “is an action of the one [mind] on the other [body].”⁶⁰ That is, when a mind thinks, it produces a thought that somehow involves its body. Moreover, Leibniz insists that the unity of the active and passive principle depends on the constant activity of the one on the other. While it remains unclear exactly what this activity is, the unity of the substantial nature clearly depends on the organization that mind (somehow) bestows on body. It is also evident that the activity in the created world ultimately has its source in the activity of minds.

For the sake of convenience, let's summarize what we have learned in this section about the active and passive principles in a corporeal substance. Leibniz has told us a good deal about the behavior of minds: for every mind-like substantial form F, F acts constantly on its passive principle P by a set of instructions given it by God, F is permanently attached to P so that F will only act outside itself through P, F creates a substantial unity with P by so acting and the acting of F is a form of thinking that produces thoughts. This point about substantial unity is worth emphasizing. For Leibniz, in *On the incarnation of God*, F and P will form a substantial unity if and only if F acts constantly on P and P is the “instrument of acting” of F. Leibniz has also offered here some important information about the passive principle: P contains nothing active in itself and yet P is F's “instrument of acting.”

In *On the incarnation of God*, Leibniz is clear about some of the implications of these assumptions. For example, we find a view expressed here that stands as an unmotivated assertion in his mature thought, namely, that a substance cannot be destroyed by anything other than God. Although we will have to wait until the next chapter for a full account of Leibniz's underlying assumption about the close relation between being, perfection, self-

60. VI i 534–35.

sufficiency, and unity, I want to call attention to the fact that in his original attempt to formulate his Second Theory of Corporeal Substance, Leibniz proudly proclaims the (natural) indestructibility of individual corporeal substances. *On the incarnation of God* implies that the (natural) indestructibility of substances depends on their self-sufficiency, and that their self-sufficiency depends on the constant activity of the active principle on the passive principle. The essay also insists that the unity of a substance depends on this constant activity of mind. Moreover, on the basis of this metaphysical union (see especially claims (4) and (5)), Leibniz offers a new solution to the problem of the immortality of the soul and the first part of what becomes his solution to the problem of resurrection. In the *Confession of nature against the atheists*, Leibniz's argument for immortality was based on the claim that the soul has no parts and hence cannot be destroyed.⁶¹ The argument in *On the incarnation of God* follows from the assertion that the destruction of the human body is irrelevant to human existence: the human body may pass away, while the human soul persists in some small part of the original. Although the strength of this argument depends entirely on the strength of the underlying metaphysical assumption about the relation between mind and body, Leibniz seems secure in his views. In chapter 8, section 3, I offer a more complete explanation of Leibniz's account of resurrection. As we will see, he was motivated to attach the mind permanently to a part of its body in order to offer a metaphysics consistent with that theological doctrine.

That *On the incarnation of God* presents the fundamental structure of Leibniz's Second Theory of Corporeal Substance is clear. But regardless of its genuine success as a first major step towards the construction of this new conception, there were important questions left unanswered in *On the incarnation of God*. Nor did this fact escape its author's attention: as its tentative conclusion suggests, Leibniz was well aware of the need to add some important details. In order to develop a theory of corporeal substance that would constitute an adequate replacement for the original conception, he had to answer a number of important questions: in what sense does mind act and think constantly?; how does thinking involve the body?; how exactly does God act on the mind and the body?; in what sense, is the mind in a corporeal substance permanently attached to some body?; how does the mind act through the body to which it is permanently attached on the other parts of its body?; how exactly does created mind act as God's "instrument"?; in what sense is mind *in* the body?; and finally how do conscious minds differ from the minds in non-human corporeal substances? Although it was not his purpose in the essay to give a full account of mind, his new conception of substance obviously will have to distinguish between conscious and unconscious minds. According to what Leibniz says here, amoebas and petrified wood, ants and human beings, all continually think in the same way.

61. In fact, this is a standard argument in the period. See, e.g., Kenelm Digby's *Two Treatises*, 350-402.

For the complete answer to most of these questions, we will have to wait until Leibniz's *Metaphysics of Divinity* has been thoroughly laid out. In the remainder of this chapter, I focus only on those questions whose answers constitute the most fundamental elements of the Second Theory of Corporeal Substance. In order to develop a notion of substance that would constitute an adequate replacement for his original conception, Leibniz had to have something to say about (at least) the following questions: (1) what is the mind-like substantial form or active principle in a (non-human) corporeal substance?, (2) what does the active principle do to the passive principle when it acts on it?, (3) how is the activity within a body related to its motion?, (4) what is the nature of (conscious) mind?, (5) what is it that mind does when it constantly thinks?, and (6) how does conscious mind differ from the active principle or (unconscious) mind in non-human corporeal substance? It is not surprising that after completing *On the incarnation of God*, Leibniz directed much of his attention to such topics. For his answers to these questions, let's turn to the next phase of his philosophical development.

4. Development of a conception of mind and activity

While vacationing with Boineburg in August 1669, Leibniz was introduced to some proposals about motion by Christiaan Huygens and Christopher Wren.⁶² He reports that he was especially impressed by Wren's "thoughts concerning the *rationes* of motion."⁶³ After he studied the texts of these prominent natural philosophers, he began a more serious study of Hobbes' physics than he previously had managed.⁶⁴ Between August 1669 and the time he left for Paris (March 1672), Leibniz worked hard on questions surrounding motion and mind. The *New Physical Hypothesis* and the *Theory of Abstract Motion* of 1671 are the culmination of this work. Intended as they were to be an account of the formation of the world, its maintenance and physical laws, the two-part study is replete with technical details and charts. Scholars have attached a good deal of importance to these texts, which Leibniz calls his *Schediasma*; and there have been some important recent studies on this aspect of Leibniz's early thought.⁶⁵ But there is much more to Leibniz's philosophy in 1670–71 than a study of the *Schediasma* and the related works on physical topics suggest. Once we place these writings within the more general context of Leibniz's *Metaphysics of Substance*, and once we compare them with other texts of the period, they can be seen to contain answers to the six questions just listed. In other words, the *Sche-*

62. see VI ii 157. 63. II i 62.

64. Bernstein shows in "Conatus, Hobbes, and the Young Leibniz" that N. 38.3 (VI ii 167ff) includes a clear presentation of some of Hobbes' ideas. In N. 38.4 (VI ii 170ff), the next essay Leibniz wrote, he begins to make important use of the notion of *conatus*. The former piece was probably written in the fall of 1669, the latter in the winter of 1669–1670.

65. See, esp., Garber, "Leibniz: Physics and Philosophy;" Beeley, *Kontinuität*, esp. chs. 7, 9, 10; Arthur, *Labyrinth*, Introduction, esp. sect. 3.

diasma and related texts go beyond *On the incarnation of God* and offer the missing details of Leibniz's Second Theory of Corporeal Substance.

As a result of Leibniz's uncharacteristic explicitness about the development of his ideas during this period, it is fairly easy to piece together the steps he took in answering the questions which *On the incarnation of God* left unanswered. Since his account of mind and its relation to the passive principle in substance is crucial to the success of his new conception, it will be especially important to analyze thoroughly this part of the new theory. But we need to proceed very carefully at this point. In chapter 7, I offer an argument to the conclusion that by the time of the *Schediasma*, Leibniz had decided to reject the real extension of passive (primary) matter and to turn the passive principle in corporeal substance into a collection of mind-like substances.⁶⁶ There are two reasons for not presenting an account of those conclusions here. First, they rely significantly on Leibniz's Platonism and other philosophical concerns which are inappropriate to summarize. Second, I want to emphasize the fact that the exact nature of the passive principle in corporeal substance is irrelevant to the development of Leibniz's views about mind and to the general relation between the active and passive principles in corporeal substance. In other words, the structure of Leibniz's Second Theory of Corporeal Substance could comfortably accommodate radically different accounts of passivity. Let me make the point as clearly as possible. In the *Schediasma* and related texts, either there is passive extended (primary) matter (i.e., body qua matter) or there is not. What I want to emphasize here is that it is unimportant to our present discussion which of these disjuncts is true. For our purposes, we may remain *entirely* uncommitted to the exact makeup of passivity. At this point in my developmental story, it is only required that the active and passive principles be essentially different in that the one acts while the other is acted upon. It should be understood, therefore, that in the remainder of this chapter, when I discuss either the body or the *passive* principle in corporeal substance, I am committing myself only to the existence of something that is acted upon by the active principle.

After explicating his views on hypostatic union in *On the incarnation of God*, Leibniz was at a critical point. In the formulation of his new account of substance, he had decided that an incorporeal being somehow had to be in body so as to form a substantial union with it, that the union of the two had to involve the constant activity of the incorporeal being or mind on the corporeal being or body, and that the incorporeal being had to be "rooted in" the corporeal. At some point in the winter or spring of 1670, Leibniz

66. It is important at this point to be clear about terminology. When I argue in ch. 7 that by the time Leibniz composed the *Schediasma*, he had rejected the reality of extended passive matter, it does not follow that he had given up talking about the *passive principle* in corporeal substance. For much of his long career (and arguably for all of it), Leibniz considers the basic entities in nature to be corporeal substances, each of which is constituted of an active and passive principle, although the passive principle is neither strictly corporeal nor strictly passive.

began to construct an account of the nature of mind and its exact relation to body that would satisfy these requirements. That is, he developed a conception of mind that helped to answer some of the questions left unanswered by *On the incarnation of God*. But at the same time, Leibniz was deeply concerned to construct an account of the motion of bodies. The evolution of his views about substance in 1670 reflect his keen desire to solve these metaphysical and physical problems at the same time.

The process of discovery that led to Leibniz's insights about mind and motion depended crucially on the metaphysics of Aristotle and the physics of Hobbes: whereas Aristotle motivated his account of substance, Hobbes inspired his notion of endeavor or *conatus*. But Leibniz also insists that he has acquired from Cavalieri and others an understanding of the nature of points and indivisibles.⁶⁷ In an important letter to Henry Oldenburg of September 1670, he proudly announces that he has made use of the ideas of these and other philosophers, and claims that the result of such philosophical borrowing is his new theory about the "abstract *rationes* of motion." Making explicit the connection between the study of motion and the nature of mind, Leibniz writes to Oldenburg: "I consider [my] theory about the abstract *rationes* of motion so important, not for its own sake and not because of the hypotheses based on it, but because it has led me with a marvelous clarity not only to the existence of Minds, but also into [their] more intimate nature, distinct from body (of which the most sensible and strict philosophers have yet despaired)."⁶⁸

Concerning the contribution that the metaphysics of Aristotle made to the evolution of his thought, Leibniz is clear about the fact that the general structure of his conception of substance is Aristotelian. According to Leibniz, the relation between the active and passive principle is fundamentally one of organization, where the former causes the organization of the latter and, by such means, creates an organized unity with it. Leibniz summarizes the basic point neatly in an important letter to Johann Friedrich of May 1671. Leibniz asserts that "there is a core [Kern] of [every] substance" and that this core can either spread throughout the body or "draw itself into an invisible center [when, e.g., an organism dies]," which is like "its source and

67. Because of Leibniz's use of the term *conatus*, it is easy to think that Hobbes' natural philosophy played a more important role in the development of Leibniz's views at this time than it probably did. Current commentators on Leibniz's attempts to solve the problem of the continuum disagree about the role that Hobbes played. For two recent discussions of this topic and citations to other literature, see Arthur, *Labyrinth* and Beeley, *Kontinuität*. In developing his new physics, it is clear that in addition to the work of Huygens and Wren, Leibniz found Cavalieri's writings to be of great importance. He often refers to Cavalieri with great admiration and frequently credits the Italian for his understanding of a variety of important matters (II i 90, 97). For a short discussion of the influence of Cavalieri on Leibniz, see Pierre Costabel, *Leibniz and Dynamics*, esp. 16–17. As difficult as it would be to disentangle the layers of ideas that Leibniz borrowed and used in developing his own metaphysics of reconciliation, it is clear that Cavalieri is probably more important than has previously been understood.

68. II i 65.

fountain.”⁶⁹ Leibniz further claims that the core, although unextended, is somewhat like the embryo of an animal (which contains the core of the whole body); and he maintains that such a core is to be found in inorganic as well as organic bodies. I will discuss the details of this difficult text in section 3 of chapter 8. For now, suffice it to say that Leibniz’s notion of a core of substance is consistent with his view in *On the incarnation of God*. At the end of the long quotation with which I began my discussion of that essay, Leibniz writes:

In the human body it should not be thought that the soul is unified hypostatically with all the little bodies which are in it, because they change perpetually, but [the soul] inheres in the center of the brain in a certain fixed and inseparable flower of the substance, most subtly mobile at the center of the animal spirits, and [the soul] is unified substantially [substantialiter] so that it may not be separated by death.⁷⁰

The point to emphasize here is that “this flower of substance” is equivalent to the “core of substance” in the letter to Johann Friedrich in that it is the union of the mind and the part of its body to which it is permanently attached. The mind acts through its core to create an organization of matter that can be more or less expansive. As Leibniz explains to Johann Friedrich, during the life of an organism, the organization “spreads throughout” the matter of the thing, while at death, the organization of the whole ceases, and the organizing principle shrinks to an invisible center. Thus, the relation between the active and passive principles is fundamentally one of organization, where the former turns the latter into an organized unity.

In a letter to Arnauld of November 1671, Leibniz is also clear about his debt to the thought of Aristotle. Indeed, the description that he offers of his recent intellectual development is consistent with the developmental story told in this chapter. He explains to Arnauld:

First I discovered that the essence of body does not consist in extension, as Descartes (a man otherwise great without doubt) thought, but in motion and consequently that the substance or nature of body (by all means consistent with the definition of Aristotle) is the principle of motion . . . ; moreover, [I discovered that] the principle of motion or the substance of body lacks extension.⁷¹

Let’s explicate this passage with some care. According to the Principle of Substantial Activity, whatever has its own principle of activity is a substance. Following that principle, Leibniz assumes here that the active principle in a corporeal substance is itself a substance. He therefore implies a distinction between the active principle or substance (*substantia*) of body and its essence (*essentia*). What Leibniz writes to Arnauld is consistent with the distinction drawn in the discussion of *On transubstantiation* between the substance or active principle in a corporeal substance and its essence as an organization of parts. Again, his point to Arnauld is that body qua matter is not by itself the essence of body; rather, before anything corporeal can have an essence, it has to have an organization and before it can have an or-

69. II i 108–109. 70. VI i 533. 71. II i 175.

ganization it must have a principle of activity or (in that sense) a substance. What Leibniz suggests here is that the corporeal essence exists if and only if the active principle organizes the passive principle: there will be no essence without organization. A comparison with organic unity may be helpful here. In an organism, it makes sense to say both that the organization is the essence of the thing and also that the organizing principle is the cause of the essence of the organism in that the principle is what first produces and then maintains the organization. Thus, when Leibniz explains to Arnauld that the essence of body is motion and that the substance of body is an incorporeal principle, the idea is that the essence of the body is the result of an active principle in a corporeal substance organizing – and in that sense putting into motion – its passive principle.

After writing *On the incarnation of God*, Leibniz began to clarify the exact relation between the active and passive principles in a corporeal substance. What he borrowed from Aristotle was the idea that the relation is fundamentally one of organization: the active principle organizes the passive principle and thereby creates the essence or nature of the corporeal substance. It follows from this basic idea that the active principle could organize more or less of the passive principle and in that sense be more or less expansive. It also follows that the model for Leibniz's Second Theory of Corporeal Substance is an organism constituted of an (active) organizing principle and a (passive) principle that is organized. Other texts of 1671, which we will discuss in chapters 8 and 9, corroborate this way of understanding the role of the active or incorporeal principle in corporeal substance.

Leibniz took the next step toward developing his Second Theory of Corporeal Substance when he made a dramatic discovery that allowed him to solve the critical problem of how to put the unextended and incorporeal active principle or mind in body. As he explains to Arnauld: "I saw that geometry, or the philosophy of position, is a step toward the philosophy of motion and of body and that the philosophy of motion is a step toward the science of mind. . . . I demonstrated that the true locus of mind is a certain point or center."⁷² Thus, according to Leibniz, he took a crucial step in the development of his Second Theory of Corporeal Substance when he decided to place mind in an unextended and indivisible point. As he explains to Oldenburg in September 1670, the development of his new philosophy "depended on the most subtle contemplation concerning the nature of points or indivisibles."⁷³ Once again, in developing this part of his new theory, Leibniz borrowed from other philosophers. That Leibniz owes much to Hobbes is clear, though scholars disagree about the extent of his debt. That Leibniz happily placed the mind or active principle of a corporeal substance in a point is evident, though commentators remain unsure about some of the details about his conception of points. I defer to other scholars on these topics, and merely emphasize the fact that the idea of an indivisible and unextended point gave Leibniz a neat way of putting the unex-

72. II i 172–73; L 148–49. 73. II i 64.

tended and incorporeal active principle in the extended and corporeal one. By conceiving of a point as that which is unextended and indivisible, Leibniz gave himself the conceptual means to distinguish neatly between the “place” of mind and that of body, and hence a way of putting mind into body. That is, he discovered that “mind itself actually exists in [bestehen] a point as opposed to body [which] occupies space.”⁷⁴

The third crucial ingredient in Leibniz’s eclectic concoction was the notion of endeavor or *conatus*. As he explains to Oldenburg, he came to understand that “endeavor, as most correctly observed by Hobbes, is the origin of motion, or what is in motion as a point is in a line.”⁷⁵ Hobbes had defined endeavor as infinitesimal motion or “motion made in less space and time than can be determined or assigned by exposition or number.”⁷⁶ Given our present concern with the development of the general features of Leibniz’s Second Theory of Corporeal Substance, the point to emphasize here is that the conception of endeavor was enormously helpful: it gave him a way to conceive the actions of corporeal substances or what it is the active principle does when it acts through its passive principle.⁷⁷ It seems likely that the notion of endeavor inspired Leibniz to conceive of the minds in unconscious substances as momentary. That is, the idea of an unconscious mind existing in an unextended point and the notion of an unextended motion might have inclined Leibniz to think of these minds as existing in unextended time: a momentary mind was just the right sort of thing to have

74. II i 108. In fact, scholars disagree about whether or not, for Leibniz here, points are really unextended or merely too small to be measured. Leibniz writes that a point “is not that which has no parts [against Euclid], nor [that] whose parts are not considered [against Hobbes], but rather [that] whose extension is nil” (VI ii 265). Scholars disagree about how to take such claims. As Bernstein puts it: “the dimensionality of a point or the smallness of its parts is such that it can be dispensed with in geometry” (27). For a discussion of Leibniz’s views, see especially Bernstein, “*Conatus*, Hobbes, and the Young Leibniz”; Bealey, *Kontinuität*, ch. 10; Arthur, *Labyrinth*, Introduction, sect. 3.
75. II i 64. What Leibniz does not tell Oldenburg is that the notion of *conatus* or endeavor also came to play a central role in his ethics. It is striking that in Leibniz’s notes *On the elements of natural law* (written between the second half of 1669 and late 1671), there is a shift in his treatment of human psychology based on the incorporation of the concept of *conatus*. Compare the early essays (VI i. N. 12.1 and N. 12.2), which are absent of the notion, to those written after early 1670 (VI i. N. 12.2–12.6), which employ *conatus* as a central element. In short, the notion of *conatus* had important applications, for Leibniz, in ethics and law as well as in physics.
76. Hobbes, *English Works*, I, 206.
77. Bernstein presents a helpful account of Leibniz’s early use of the notion of *conatus* and how it compares to that of Hobbes, but he gives the misleading impression that the use of Hobbes’ work and ideas extends throughout all of Leibniz’s early writings on natural philosophy. It is interesting that on the basis of his comparison of Hobbes’ and Leibniz’s works on natural philosophy, Bernstein concludes that: “while Leibniz’s early writings [in fact only those in late 1669 through late 1671] on natural philosophy are virtually steeped in *De Corpore* he is constitutionally unable or unwilling to absorb an idea without changing it significantly. At the very moment Leibniz is extrapolating the notion of endeavor from Hobbes’s pages, he is molding it into a new form.” See Bernstein, “*Conatus*, Hobbes, and the Young Leibniz,” 29.

an endeavor. But whether or not the one notion influenced the other, Leibniz developed the elegant idea that an unconscious mind was a being existing in an unextended point through unextended time with unextended actions. Moreover, the notion of endeavor also gave Leibniz a neat way to explain motion: once he had defined endeavor as “motion through a point in an instant,”⁷⁸ he could build motion out of endeavors in the same way he built space out of points and time out of instants. Leibniz often notes that “endeavor is in motion or action, as a point is in a line and a moment is in time,”⁷⁹ and that “every motion is composed of many endeavors.”⁸⁰

At the same time Leibniz was deciding where to put mind and how to conceive of unconscious minds and their actions, he was thinking about the difference between conscious and unconscious minds. As he wrote to Oldenburg in April 1671:

every body is an instantaneous mind, mind preserves [servare] endeavor . . . , body does not preserve [endeavor]: but mind is not able to desist from acting, mind propagates itself [propagare se ipsam] without a new creation; . . . what space and motion are responsible for [praestare] in bodies, points and endeavors are in minds.⁸¹

There are several important points here. First, according to Leibniz, mind (which exists in a point) “is not able to desist from acting” and indeed “propagates itself without a new creation.”⁸² Consistent with the statements Leibniz made in *On the incarnation of God*, mind subsists per se (statement (1)), has a principle of action within itself (statement (7)), and acts constantly (statement (9 (a))). Second, Leibniz is now prepared to tell us a bit more about how this happens. Although an unconscious or momentary mind never persists more than a moment, it (somehow) propagates itself from moment to moment.⁸³ Third, Leibniz tells us that “mind in its very nature acts,”⁸⁴ that “the actions of mind consist in endeavor,”⁸⁵ and that “mind preserves [servare] endeavor.”⁸⁶ Since endeavor is infinitesimal motion and since motion is a feature of a body or corporeal substance, it follows that when mind acts it acts through the body to which it is attached and thereby produces an instantaneous motion. That is, consistent with his position in *On the incarnation of God*, Leibniz maintains that every created mind has a body with which it is unified (statement (4)), in which it is rooted (statement (5)), and through which it acts (statement (2)). Mind constantly acts through the body with which it is attached and the result is “endeavor, or motion . . . in a point.”⁸⁷ In short, each endeavor is an action of substance; it is what mind produces when it acts, as it always does, through its body. Leibniz explains to Johann Friedrich that “as the actions of bodies consist in motion, so the actions of mind consist in endeavor, that is, mo-

78. II i 102; see also, e.g., II i 171. 79. VI ii 332; see also, e.g., II i 173.

80. VI ii 281. 81. II i 102. 82. Ibid.

83. In order to grasp the propagation of minds, we need to understand the theory of traduction and Leibniz's use of it. I explicate the traditional theory of traduction in ch. 5 and in ch. 6, sect. 2, discuss Leibniz's use of it in the period 1670–71.

84. VI ii 480, 482. 85. II i 108. 86. II i 102. 87. II i 108.

tion . . . in a point.”⁸⁸ Therefore, a corporeal substance is a combination of an active and a passive principle. By constantly acting on the passive principle to which it is attached, mind makes it into a corporeal substance and maintains it as such. Each of the actions of mind through its passive principle results in an infinitesimal motion or endeavor.

At the end of section 3, I proposed six questions that Leibniz needed to answer in order to develop a conception of substance that would constitute a proper replacement for his original theory. We now have straightforward answers to the first three of these. First, the active principle in a (non-human) corporeal substance is a momentary mind that (somehow) propagates itself. Second, when the active principle acts on the passive principle what happens is that the mind organizes it. Third, “[e]very action of a body is motion”⁸⁹ and “the present motion of body arises from the composition of preceding endeavors.”⁹⁰ That is, mind acts constantly and thereby causes a series of endeavors which are the actions of a body and which themselves constitute the motion of the latter.

And that’s not all. The newly developed details of Leibniz’s Second Theory of Corporeal Substance contain answers to the other three questions as well. He writes to Arnauld in November 1671:

I demonstrated that the true locus of mind is a certain point or center, and from this I deduced some remarkable conclusions about the imperishable nature of mind . . . and the true innermost difference between motion and thinking [cogitatio]. Thinking consists in endeavor as body [consists in] motion. Every body can be understood as a momentary mind or a mind without recollection. . . . As body consists in an extent [tractus] of motions, so mind consists in a harmony of endeavors.⁹¹

Against the background of Leibniz’s Original Theory of Corporeal Substance and his notion of endeavor, we can discern in such passages the nature of conscious mind and grasp the difference between it and unconscious or momentary mind.⁹² We have seen that according to Leibniz, “mind in its very nature acts” and “the actions of mind consist in endeavor.” Therefore, conscious and unconscious minds are similar in that each constantly acts, and the actions of each are endeavors. For Leibniz in 1671, they differ only in the endurance of their endeavors: while “all the endeavors endure” in conscious minds, they do not endure in unconscious ones. He writes to Oldenburg: “Every body is a momentary mind, and accordingly without consciousness, sense, or memory. For truly, if in a single body two contrary endeavors could endure beyond the moment, every body would be a true mind. Whenever this has occurred, [true] minds are produced.”⁹³ When en-

88. II i 108. The original language here is: “wie Actiones Corporum bestehen in motu, so bestehen Actiones mentium in conatu, seu motus . . . puncto.”

89. See, e.g., II i 63; VI ii 165. 90. II i 173: L 149. 91. II i 173: L 149.

92. My account here of Leibniz’s conception of mind differs from those given previously. See, e.g., Bernstein, “*Conatus*, Hobbes, and the Young Leibniz,” 28 and 37; Garber, “Motion and Metaphysics,” esp. 173.

93. II i 90.

deavors endure, the mind that causes them organizes them into a harmony. Conscious mind “is made of a harmony of endeavors.”⁹⁴ As Leibniz explains, “the retention of all endeavors, or rather of the arrangements among them, that is, of all their states, this constitutes [conscious] mind.”⁹⁵ In unconscious minds, the endeavors do not form a harmony because they do not endure, and they do not endure because the minds in bodies are merely momentary. Although an unconscious mind propagates itself, none of its instances lasts more than a moment, and the endeavors that it produces are infinitesimal. In short, the endurance of the endeavors of conscious mind is crucial because the harmony depends on the endurance and the thinking depends on the harmony: “[conscious] minds are able to think, to compare diverse things; to perceive . . . ; [the minds in] bodies are not.”⁹⁶

What we have here is nothing less than an account of thinking where the actions of bodies and the actions of minds are closely parallel. Before summarizing this view, it is worth remembering what Leibniz said about thinking in *On the incarnation of God*. In that essay, he suggests that the thinking of a mind in a corporeal substance S (somehow) involves its body and moreover that when the mind acts on its body, it (somehow) produces a thought. The proposals about mind and endeavor described here represent significant progress in Leibniz’s attempt to make sense of exactly how the thinking of a mind might involve its body. According to Leibniz in the notes and letters quoted, every mind – whether conscious or not – acts; when it acts, it organizes its passive principle and produces a substantial state which is an endeavor. When the mind in a corporeal substance S is momentary, it is part of a series of minds in S, each of which acts through its passive principle to produce an endeavor which is itself a feature of S; the series of these endeavors constitutes the motion of S. When the mind in a corporeal substance S endures, it acts through its passive principle to produce a harmony of endeavors; the harmony of these enduring endeavors constitutes the conscious thinking of S. Each harmonized endeavor is presumably a thought. Leibniz asserts: “As body consists in an extent [tractus] of motions, so [conscious] mind consists in a harmony of endeavors.”⁹⁷ The nature of a corporeal substance S, whether conscious or unconscious, consists in the union of the active and passive principles in the constant activity of the one on the other. The difference between the activity of the momentary minds in unconscious corporeal substances (or bodies) and the activity of those in conscious corporeal substances is a matter of endurance.

Leibniz was proud of this elegant account of mind, thinking, and corporeal substance. In the introductory remarks to his *Theory of Abstract Motion*, he proclaims that he has grasped “the inmost nature of Thinking, and the perpetual nature of Mind.”⁹⁸ However, as I will show in chapter 6, despite his enthusiasm, Leibniz soon rejects some of the details of this account of the active principle in corporeal substance. The most dramatic example of a shift in his thinking is that the definition of an unconscious corporeal

94. VI ii 285. 95. VI ii 285. 96. II i 113. 97. II i 173; L 149. 98. VI ii 262.

substance as that which has a momentary mind is itself rather momentary. There will be ample time to explain the evolution in his views about these topics in the chapters that follow. Now that I have described the steps that Leibniz took in the development of his new philosophy and indicated the sorts of problems each step was supposed to solve, the materials are in place to explicate his Second Theory of Corporeal Substance. While it is true that Leibniz will tinker with the details of this theory, it will retain its general features for years to come.

5. Second conception of substance

It is now time to display Leibniz's Second Theory of Corporeal Substance and show how neatly it solves the problems faced by the original conception. In section 2, I noted that, although Leibniz often refers to mind in his theological writings of 1668–69, he does not offer an account of either mind or thinking. In sections 3 and 4, I showed that between late 1669 and late 1670, Leibniz constructs a conception of an incorporeal active principle whose activity generates a substantial unity with its passive principle. The significant difference between the two theories of substance – according to which the second is able to avoid the problems with the first – lies here.

In Leibniz's Original Theory of (non-human) Corporeal Substance, God activates body qua matter to form an organized arrangement of parts of matter and then, with matter, creates the nature of body. When Leibniz discovered the problem resulting from this conception (namely, that body understood in this way was neither causally nor substantially self-sufficient because the incorporeal cause of its nature stood outside it), he realized that he had to give each body its own active or incorporeal principle. Not surprisingly, the crucial difference between the first and second theories of corporeal substance is that God is the principle of activity in the former, while momentary mind has taken that role in the latter. But it was not enough merely to put an incorporeal or active principle into body; the principle somehow has to be part of the *nature* of the body. That is, the incorporeal or active principle has to form a single, unified nature with the corporeal or passive one so that the substantial nature can constitute a complete *ratio* of its features and hence be properly self-sufficient. Leibniz's notion of endeavor as the infinitesimal motion that mind produces by acting through its passive principle and his new conception of mind gave him a way of constructing a unified substantial nature out of two distinct things. Because the relation between active and passive principles is one of organization, it follows that although mind exists in a point, the organization that it causes is able to be more or less. Because the active principle constantly acts through its passive principle, each of its actions produces an endeavor or infinitesimal motion. It is important to emphasize the fact that an endeavor, or infinitesimal motion, is the result of mind acting *through* the passive principle: the mind does the acting, but the passive principle is what is acted upon and therefore is what is organized. Thus, the mind or active principle and

the body or passive principle are constitutive parts of any endeavor in that each endeavor is the result of some mind acting through some body.

By activating its passive principle, mind creates an organization or corporeal substance. Since the active and passive principles are constantly joined in the activity of the one on the other, a corporeal substance is a hypostatic union of the two principles: corporeal substance is constituted by the active and passive principles in constant relation. By such means, Leibniz's Second Theory of Corporeal Substance avoids the difficulty with his first: whereas, according to the original theory, the nature of substance by itself did not offer a complete account of its features, according to the second conception, "the nature of the thing is the cause in the thing itself" of its features.⁹⁹ By cleverly combining the active and passive principles into a hypostatic union in terms of which a complete *ratio* of the corporeal features of the union can be given, Leibniz has constructed a theory of substance that is self-sufficient in a way consistent with the Principle of Self-Sufficiency and Principle of Causal Self-Sufficiency. With great finesse, Leibniz's Second Theory of Corporeal Substance neatly solves the problems with the first. Let's summarize it and the related assumptions of this chapter as follows:

- *The Second Theory of Corporeal Substance* maintains that, for each corporeal substance S, whether human or non-human, the nature of S is constituted of a mind-like substantial form F and a passive principle P. Consistent with the *Substantial Form Assumption* and the *Passive Principle Assumption*, F acts on P to produce an organization with P such that the organization is the nature of S (in 1670–early 1671, the mind-like substantial form in unconscious substances is a momentary mind).
- The (1670) *Substantial Form Assumption* claims that, for every mind-like substantial form F in a substance S, F acts constantly on its passive principle P by a set of instructions given it by God, F creates a substantial unity with P by so acting, F is permanently attached to P so that F will only act outside itself through P, and the acting of F is a form of thinking that produces thoughts.
- The (1670) *Passive Principle Assumption* maintains that, for every passive principle P that forms a unity with a mind-like substantial form F, P contains nothing active in itself and P is the "instrument of acting" of F.

As this account of substance helps to explain, for Leibniz in 1670–early 1671, the activity in the created world ultimately reduces to the activity of the mind-like substantial forms in nature. That is, there are mind-like forms that act and that have been arranged by God from the beginning; although some of their actions constitute thinking and some constitute motion, they are the ultimate source of all the activity in the created world.

99. VI ii 303.

But despite its significant advantages over the Original Theory of Corporeal Substance, Leibniz's Second Theory in broad outline is strikingly similar to the first. Once again, there is a passive element that is indeterminate and must be made a single thing through activity. The principle of activity once again is something incorporeal which plays the role of Aristotelian substantial form, the determining principle, the principle that makes the thing what it is. When the incorporeal principle individuates the corporeal principle, the result is again an individual corporeal substance. And, once again, the resulting physics is fundamentally mechanical in that all corporeal features are reducible to and explainable in terms of the corporeal parts. The crucial difference between the two conceptions is that in the second, each substance has its own incorporeal principle that is related to the corporeal principle so as to form a single nature with it. This is important: by giving each substance its own substantial form or organizing principle, Leibniz has constructed a conception of substance that neatly solves the problem posed by his original conception; by giving bodies their own momentary minds, he has populated the world with minds where once there was only God. Moreover, he has constructed a more straightforward version of Aristotelian substance, a version more similar to the conception of Aristotle himself. Like Aristotle, Leibniz now makes substance a composite of two principles that are combined so as to create a single, unified, and self-sufficient substance. As I have said, Leibniz will tinker with the details of this account. But the structure of substance articulated here forms the basis of his *Metaphysics of Substance* for years to come and constitutes the background to the philosophy of the *First truths*.

Leibniz was pleased with his new and improved theory of substance and proud of its conciliatory potential. In the winter of 1670–71, he began to correspond with some of the leading intellectuals of Europe. As a consequence, he wrote more letters in 1671 than in all the preceding years of his life. The majority of the 1671 letters are advertisements for his new metaphysics. Several of these speak specifically about his interest in Aristotle, reformed philosophy, and theology; others reveal the story behind the development of his philosophy. I will discuss some of the details of these letters in the chapters that follow, but it is important to note here that Leibniz was proud of the theological and conciliatory potential of his Second Theory of Corporeal Substance. In the letters of 1671, he frequently proclaims that his work in natural philosophy is motivated by his interest in theological issues. He complains about the fact that because contemporary philosophers want to explain everything mechanically, they both ignore “the real rationale [of the world] in which the wisdom of the author shines forth”¹⁰⁰ and leave unresolved the problem of “the Eucharist, the incarnation [of God], and other mysteries.”¹⁰¹ Contrary to these mechanists who “take only matter to be the principle of things,” Leibniz says that he will formulate a natural philosophy that will be concerned with final causes and that will not

100. H i 73. 101. H i 163.

bring “so much geometry to physics.”¹⁰² In this context, it is not surprising that Leibniz often announces the success of his new conception of substance in resolving a whole group of theological difficulties. He claims that his recent work sheds light on “the mysteries of the Trinity, the Incarnation, Predestination, and . . . the Eucharist,”¹⁰³ and that it constitutes “an excellent argument” for the immortality of the soul as well as an explanation for the resurrection of the body.¹⁰⁴ He also announces that one of the great advantages of his theory of substance is that it avoids the perpetual miracle of recreation and does not invoke God unnecessarily.¹⁰⁵

The letters and essays of 1671 also indicate that Leibniz remains very much a reformed philosopher. Throughout the period, he refers to Aristotle and acknowledges the importance of the ancient in the development of his thought.¹⁰⁶ At one point, he even congratulates Aristotle on his style of doing philosophy, emphasizing the fact that he assumed nothing “about which he was not certain” and “was careful in every part.” Leibniz marvels at the fact that in his own century, there are no philosophers “quite like the ancients,” nor anyone who “makes a wholly integrated system in the way that Aristotle did.”¹⁰⁷ But he also insists that “for the true physics,” one needs to consider “Hobbes, Galileo, and Huygens on motion” as well as “Aristotle and Digby who in their pure reasonings do not depend on experiments.”¹⁰⁸ In response to a contemporary Aristotelian who insists that much of what passes for new in their period can be found in Aristotle, he preaches greater understanding and tolerance: according to Leibniz, while “much is thought exceptional out of ignorance of Aristotle,” contemporaries like Hobbes and Descartes have made many advances.¹⁰⁹ And, in a letter to Duke Johann Friedrich of late 1671, he explains:

I intend to show by means of the strength of the principles of the *Reformed Philosophy* that it is necessary to place an innermost incorporeal principle in every body, that is substantially distinct from mass, and that this [incorporeal principle] is what the ancients and what the Scholastics called substance, although they were unable to explain themselves clearly and were even less able to demonstrate their opinion.¹¹⁰

In short, despite the very real differences between the Original and the Second Theories of Corporeal Substance, Leibniz remains entirely committed both to his Aristotelian Metaphysics of Substance and to his Metaphysics of Method.

In the introduction to this chapter, I noted that Leibniz’s *New Physical Hypothesis* and *Theory of Abstract Motion* of 1671 are devoid of Aristotelian

102. II i 73; L 149. 103. Ibid. 104. II i 109, 126. 105. II i 98.

106. See, e.g., II i 94, 175; VI ii 266, 280, 304, 417. 107. VI ii 301–02.

108. VI ii 395. 109. II i 94–95.

110. II i 163. The German-Latin text reads: Ich will weisen vi principiorum *Philosophiae Emendatae*, necesse esse ut detur in omni corpore principium intimum incorporeum, substantiale a mole distinctum, et hoc illud esse quod veteres, quod Scholastici substantiam dixerint, etsi nequiverint se distincte explicare, multo minus sententiam suam demonstrare.” Leibniz’s letters to Duke Johann Friedrich are interesting for their combination

terminology, and consequently that this two-part work has been taken by scholars to represent a rejection of the remaining residue of his scholastic past. Due to the absence of anything overtly Aristotelian in these important texts, they seem to contradict the interpretative story of Leibniz's philosophical development as told in chapters 1–3: not only does Leibniz appear to reject his former Aristotelianism, he shows no clear signs of his conciliatory tendencies. As most scholars have agreed, the *New Physical Hypothesis* and *Theory of Abstract Motion* stands as vivid proof of Leibniz's acceptance of the new mechanical physics. As it turns out, however, once we widen our philosophical and textual scope, both the *Schediasma* and the related physical writings sit easily within Leibniz's Aristotelian Metaphysics of Substance. That is, instead of conflicting with Leibniz's Aristotelian Metaphysics of Substance, the physical writings of 1670 and 1671 represent an important step in its full-blown development. Nor do they conflict with his conciliatory strategy. That Leibniz considers his *Schediasma* to be the result of his Metaphysics of Method is clear. In the conclusion to his *Theory of Abstract Motion*, he proudly explains that in the process of developing his new theory, he “did not leave any theory basically unexamined” and, moreover, that he meditated “long and deeply” on “the most profound mysteries of faith.”¹¹¹ That Leibniz considers his *Schediasma* to help reveal the underlying goodness of the world and the nature of its creator is also evident. As he claims in the introduction of the *Theory of Abstract Motion*, his theory helps to unveil “the profound nature of . . . the First Cause.”¹¹² Now that we have some sense of Leibniz's Metaphysics of Substance, it is time to turn to his Metaphysics of Divinity and the complicated notion of First Cause at its core.

of German and Latin. The letters are written in German, but the philosophical terminology is all in Latin. As a result, although most paragraphs are merely dotted with Latin words and phrases, some have more Latin than German. Leibniz explains in his edition of Nizolio's text that the German language is potentially an excellent language in which to philosophize, but that, because people who have tried to turn Latin philosophical language into German have been “hissed at,” no one presently dares to philosophize in German. For Leibniz's discussion about the German language and philosophy, see esp. VI ii 414.

111. VI ii 274. 112. VI ii 262.

Part three

Metaphysics of Divinity

Platonist assumptions

In 1277, professors at the relatively new university in Paris were troubled by the sudden popularity of the Aristotelian philosophy. Many considered it dangerously anti-Christian. They reacted by condemning over 200 propositions. Among those condemned were the claims that there is no more excellent way of life than the philosophical (article 40), that only philosophers are wise (article 154), and that our intellect by its own natural power can attain knowledge of God (article 211). Among many other things, the professors intended to make clear that Christianity was the only means to the truth and that the goal of philosophy was knowledge of the Christian God. The 219 propositions condemned in 1277 neatly reflect the struggle in medieval and early modern thought between philosophical speculation and Christian truth. Because the mysteries of faith and the revealed doctrines were a necessary means to truth and salvation, philosophical study could not by itself secure them. Philosophers might approach the truth on some issues, but they were bound to miss the mark on others.¹

The young Leibniz concurs. In chapters 2, 3, and 4, I have presented the development of Leibniz's *Metaphysics of Substance* and have argued that his earliest philosophical proposals are often carefully crafted to conform to Christian doctrine in general and to revealed truth (e.g., about transubstantiation) in particular. I now turn to his *Metaphysics of Divinity*, which articulates the precise relation between God and creatures and motivates some of his most important metaphysical doctrines. The core features of Leibniz's metaphysics and epistemology are deeply rooted in the Christianized Platonism that he imbibed as a youth. Where the *Metaphysics of Substance* treats substance as an active, self-sufficient thing, the *Metaphysics of Divinity* sees it as a created thing into which the Supreme Being emanates its power and essence. Where the former has its roots in the Aristotelian philosophy, the latter reaches back to the Platonist tradition. In chapters 6–9, I show that the evolution of some of the most characteristic features of Leibniz's metaphysics (e.g., Pre-established Harmony) resulted from the melding of his *Metaphysics of Divinity* and of *Substance*.

Before his departure for Paris in 1672, Leibniz had arrived at metaphysical doctrines that he would maintain for years to come, that combined Pla-

1. For a nice introduction to these issues, see G.R. Evans, *Philosophy and Theology in the Middle Ages*, esp. 14–15. For a complete discussion of all the condemned articles, see Roland Hissette, *Enquête sur les 219 condamnés à Paris le 7 Mars 1277*.

tonist and Aristotelian elements, and that solved a number of theological, ethical, and philosophical problems. In this chapter, I set the stage for the analysis in the chapters that follow. I first summarize the Platonist doctrines that most influenced the young Leibniz, and then describe the historical circumstance in which the young man became thoroughly acquainted with that philosophical tradition. I return once again to the thought of the two most prominent professors in Leipzig, Johann Adam Scherzer and Jakob Thomasius. It is significant that the metaphysics of divinity of each of these men is Platonist and that Thomasius had well-developed views about a number of topics concerning the relation between God and the created world. There can be little doubt that Platonism in general and the views of these German conciliatory eclectics in particular strongly influenced the development of the young Leibniz's *Metaphysics of Divinity*.

1. Leibniz and Platonism

That Leibniz's early metaphysics owes a great deal to Platonism will come as a surprise to many. The Platonism extant in seventeenth-century Germany has not generally been recognized, and the Platonism of the professors in Leipzig has not been noted.² Many recent scholars have identified Platonist and kabbalistic elements in Leibniz's mature writings and have speculated about their source. Most have assumed that the recognizably Platonist flavor of some of Leibniz's mature writings was due to his increasing familiarity in the 1680s with the views of the Cambridge Platonists, while some have speculated about its scholastic, Renaissance, and ancient sources.³ These scholars have been correct in their recognition of Platonist elements in Leibniz's later thought, but they have looked too far afield for its source. Leibniz drank from the Platonist fountain as a young student in Leipzig. In his typical fashion, Leibniz took these raw materials and made them distinctly his own, but there is no doubt that he acquired a thorough familiarity with them as a university student, and that they are the primary

2. Riley has recently noted "Leibniz's visible devotion to Plato and Platonism, which runs like a red thread through his whole moral and political philosophy, early and late" (25), and he nicely traces that thread, but he neither analyzes the role of the Platonist philosophy in the other areas of Leibniz's thought nor recognizes its immediate source. See *Leibniz' Universal Jurisprudence*, passim.
3. For example, in her recent book, Allison Coudert correctly identifies a number of Platonist features in Leibniz's mature thought, and then assumes that the source of these ideas must be the Cambridge Platonists in general and Francis Mercury van Helmont in particular. See Allison Coudert, *Leibniz and the Kabbalah*. Daniel Fouke proposes that Leibniz acquired his Platonist tendencies from the Platonism inherent in scholastics like Aquinas. See his "Emanation and the Perfections of Being: Divine Causation and the Autonomy of Nature in Leibniz." Some studies have taken seriously the relation between Leibniz and ancient Platonists like Plotinus, but they have focused on Leibniz's later thought and have not acknowledged the role Platonism played in his philosophical development. The best of these studies remains Joseph Politella's "Platonism, Aristotelianism, and Cabalism in the Philosophy of Leibniz;" Rudolf Meyer's "Leibniz und Plotin," 31-54; and G. Rodier's "Plotin: Sur une des origines de la philosophie de Leibniz."

source of his conception of God and the relation between God and creatures.⁴ According to my account of the development of Leibniz's metaphysics, the basic features of his Platonism were in place in 1671–72, several years before he acquired a thorough familiarity with the thought of Henry More, Anne Conway, Francis Mercury van Helmont, or any other Cambridge Platonist.⁵

A question arises at this point: if Leibniz made active use of Platonist ideas early in his career, then why doesn't he call attention to it in the same way that he does to his use of Aristotelian thought? As we have seen, he proudly proclaims his rehabilitation of the philosophy of Aristotle in his letter to Thomasius. Why didn't he call similar attention to the benefits of the philosophy of Plato? Leibniz was not motivated to justify his Platonism because that philosophy had not become the object of ridicule. On the contrary, the vast majority of Leibniz's contemporaries were themselves inclined to turn to the Platonist tradition, both pagan and Christian, for inspiration concerning divine topics. In other words, Leibniz stands in a long line of Christian philosophers who found Platonist thought much more amenable than the thought of other ancient authors to Christian assumptions about divinity. As Augustine proclaims in the *Confessions*, it was the pagan Platonists who put him on the path to knowledge of the Christian God. He explains that it was after procuring the books of the Platonists that he learned about "the light that shines;" it was "from the Gentiles that I came to You."⁶ However much Leibniz's Platonism might come as a surprise to us, it did not surprise his contemporaries. Most of them would have understood exactly what he meant when he wrote in *Discourse on metaphysics* 14 that "Now, first of all it is very evident that created substances depend upon God, who preserves them and who even produces them continually by a kind of emanation, just as we produce our thoughts;" or when he claims in *Monadology* 47 that "God alone is the primitive unity or the original simple substance; all created or derivative monads are products, and are generated so to speak by continual fulgurations of the divinity . . . , limited by the receptivity of the

4. The claim that Platonism is the primary source of Leibniz's conception of the relation between God and creatures is consistent with the fact that Leibniz often turned to the scholastics for inspiration about theological matters. As I suggested in ch. 1, Leibniz did not draw careful boundaries between the philosophical traditions, and was happy to borrow ideas from any orthodox source that could offer help.
5. Most scholars have agreed that the source of Leibniz's Platonist tendencies was some member of the so-called Cambridge Platonists, but they have disagreed about which member of More's wide circle most influenced Leibniz and when the influence occurred. To cite three examples, Coudert maintains that the relationship between van Helmont and Leibniz became important in the late 1680s, and that the former was the major source of Leibniz's Platonism; Carolyn Merchant thinks that it was Anne Conway who had the most significant influence, and that it took place in the 1690s; while Catherine Wilson argues that Ralph Cudworth was the Platonist who most influenced Leibniz, and that it began in 1689. See Coudert, *Leibniz and the Kabbalah*, passim; Merchant, "The Vitalism of Anne Conway: Its Impact on Leibniz's Concept of the Monad;" Wilson, *Leibniz's Metaphysics*, 160f.
6. VII 9 (15).

creature, to which it is essential to be limited.” In the intellectual community in which Leibniz was raised, there was no need to justify the use of the Platonist philosophy in the way there was with the Aristotelian one. As Leibniz explains in the *Specimen of Dynamics* of 1695, “[j]ust as our age has already saved from scorn . . . Plato’s ideas,” he will now “make intelligible the teachings of the Peripatetics concerning forms or entelechies.”⁷

In brief, I am making two claims: one about the intellectual context in which Leibniz’s metaphysics developed, the other about the content of that metaphysics. The first claim is that the philosophy of Plotinus, Proclus, Augustine, Ficino, Pico della Mirandola, and of course Plato himself was widely known and highly regarded throughout the seventeenth century and formed a major part of the intellectual context in which Leibniz was raised. The second claim is that some of the most fundamental doctrines of Leibniz’s metaphysics are thoroughly Platonist. In the discussion here, I will give little support for the first claim except insofar as I argue for the second. In the late 1660s, Leibniz took his extensive background in Platonism and molded it to fit his Aristotelian assumptions about substance. By combining his conception of God with his notion of individual substance, Leibniz went beyond the Platonism of his teachers and contemporaries and made that tradition his own.⁸

Before turning to the pure Platonism that Leibniz imbibed as a student, it is worth noting the impure form that was also available to him. Recent scholars have emphasized the fact that scholastic philosophy was itself full of Platonism, and it has been argued that Leibniz’s use of Platonist tenets may have come from such sources.⁹ While it is no doubt true that Leibniz and his contemporaries absorbed a good deal of Platonism along with their scholasticism, the scholastics were not the primary source of Leibniz’s Platonist tendencies. What has not been previously noted, and what is crucial to an understanding of Leibniz’s thought, is that it was as a university student in Leipzig that Leibniz acquired a pure form of Platonism that he distinguished from the thought of Aristotle and that continued to influence him for years to come.¹⁰ Let us now turn to those sources.

7. GM VI 234f; AG 118f. In the *New System of Nature*, the first published presentation of his mature philosophy, Leibniz spends nearly a fifth of the essay justifying his “rehabilitation” of Aristotelian substantial forms. Also see G IV 477–87; AG 138–145; GM VI 234f; AG 118f.
8. It is not surprising that twentieth-century scholars have not looked for the roots of Leibniz’s Platonism in the intellectual culture of Leipzig: the standard histories of philosophy in central Europe in the seventeenth century say nothing about this Platonism, nor do the major biographies of Leibniz notice the Platonism of the professors in Leipzig. In fact, as far as I know, Loemker is the only scholar to acknowledge the importance of humanist Platonism as a significant part of the background to Leibniz’s thought, though he does not identify the philosophers in Leipzig as its source and his discussion of Leibniz’s Platonism is rather programmatic. See Loemker, *Struggle for Synthesis*, passim.
9. See Fouke, “Emanation and the Perfections of Being,” sects. 4 and 5.
10. Later in life, Leibniz frequently distinguishes among the scholasticism, Aristotelianism,

The nature of Platonism in seventeenth-century Germany has not been systematically studied, and my own research to date has been cursory. But it is perfectly clear that the professors and students in Leipzig were thoroughly acquainted with that philosophical tradition. They were not scholars of Plato, but they were inheritors of a vast literature of writings that they called Platonist and that they considered a treasure trove of ideas. Making frequent use of images that one finds throughout the history of Platonism, they speak of that philosophy both as a source of divine wisdom which like the sun illuminates everything it shines on, and as a fountain of truth which has flowed through the thinkers of many centuries and nourishes their own thought.¹¹ The scope of their erudition in this area is impressive: they refer to the whole range of ancient, medieval, and Renaissance thinkers and move easily between pagan and Christian authors. It is important to emphasize that these German philosophers often do not distinguish among sources, but tend to treat Platonism as a warehouse of ideas to rummage through. What I would like to do now is to offer a summary of the Platonist doctrines which are proposed in the texts of Leibniz's predecessors in Leipzig and which influenced the development of his early thought.¹²

A journey through this Platonist terrain may strike some readers as difficult going. Some of its landmark assumptions (e.g., causal emanation, levels of being) are not easy to comprehend from our philosophical perspective. That some of the great philosophical minds in the history of philosophy have found such views obvious offers small comfort. While I cannot hope to expand our philosophical intuitions here, I would like to make the background assumptions of Leibniz's *Metaphysics of Divinity* as plausible as possible. The very fact that some of these doctrines are ex-

and Platonism that he studied as a youth. See, e.g., G III 606: L 654-55; VI vi 71-72; for a slightly earlier example, see II i 399f.

11. Marsilio Ficino had written about the Platonic philosophy that "all who desire to taste of the most delicious waters of wisdom must drink from that perennial fountain." See Ficino, *Opera*, vol. 2, 1945.
12. In his *Neoplatonism*, R.T. Wallis explains: "'Neoplatonism' is a term coined in modern times to distinguish the form of the tradition inaugurated by Plotinus (204-70) and lasting in its pagan form down to the sixth century A.D. from the teaching of Plato's immediate disciples (the 'Old Academy') and from the Platonism of the earlier Roman Empire ('Middle Platonism')" (1). I agree both with P. Merlan, in his "Greek Philosophy from Plato to Plotinus," that *neoplatonism* as a term is "misleading, in that to some it may suggest a more radical difference between the philosophies of Plato and Plotinus than is warranted" (14), and with Kristeller, who in discussion has encouraged me to refrain from using the term. There seems no more reason to refer to Plotinus, Proclus, Ficino, and others as neoplatonists than to refer to our scholastic heroes like Scotus, Aquinas, Ockham and others as neoaristotelians. The latter bear the same relation to Aristotle's thought and writings that the former do to Plato's: they see the ancient as a source of profound philosophical truth which they intend to interpret and use. But, as Eileen O'Neill has noted in conversation, it is important to distinguish between philosophers like Plotinus, Ficino, and Leibniz's teachers, who considered themselves exegetes of Platonist texts, and those early modern thinkers like Teresa of Ávila, who used Platonist ideas but bore no commitment to the tradition.

tremely odd to us helps to explain why their full significance in his thought has not been adequately appreciated by twentieth-century scholars. To make matters worse, my account of these views lacks some of the details that would make them easier to grasp. Since a thorough and detailed analysis of them would take us too far afield, we will have to be satisfied with cursory summaries. However, we must be fearless: if we are to understand many of Leibniz's most basic beliefs, we must do what we can to fathom these assumptions.

It seems appropriate to focus on the thought of Plotinus, Philo, and Augustine for several reasons: their versions of Platonism were arguably the most influential in history, they are frequently cited by the professors and students at Leipzig, Leibniz's early *Metaphysics of Divinity* bears a striking resemblance to many of their proposals, and Leibniz refers to them frequently and (mostly) approvingly throughout his life. On the basis of the scant materials available, we cannot prove that these thinkers were the main sources of Leibniz's Platonism, but we can be certain that he learned about their thought as a student at Leipzig. Not only did Leibniz write about his youth that "as a boy . . . Plato and with him Plotinus appealed to me,"¹³ his teacher Thomasiaus frequently refers to Philo and Proclus¹⁴ and acknowledges the great importance of the thought of Plotinus to the history of Platonism.¹⁵

In sections 2–7, I summarize those Platonist doctrines that constitute the materials out of which Leibniz constructed his *Metaphysics of Divinity*. My account has two limitations: it is neither uncontroversial nor sufficiently detailed. Although I have tried to be as accurate as possible in my presentation of the views of these thinkers, I have had to avoid any serious discussion of either the important differences among their views or the significant disagreements among scholars who interpret them. In other words, I am painfully aware that there are other ways of rendering these ancient doctrines. My primary goal is to situate Leibniz's texts of 1668–72 in their proper Platonist context so that we may more easily discern his original *Metaphysics of Divinity*, which is itself constructed out of exactly these Platonist materials. The summary that follows is offered as a reasonable rendering of the thought of these figures; it is an interpretation of the Platonist philosophy that as far as I can tell, Leibniz and his teachers accepted. Finally, my approach to these Platonist assumptions differs from that of the Aristotelian principles presented in chapter 2: our lack of familiarity with many aspects of the Platonist philosophy justifies a summary of these fairly fundamental doctrines in a way that our familiarity with the Aristotelian philosophy of substance did not.

2. The Supreme Being: its unity, self-sufficiency, perfection

For many ancient thinkers, ontological priority was to be explained mainly in terms of self-sufficiency. As one scholar makes the point, "that which

13. G III 606: L 655 14. Thomasiaus, *Exercitatio*, 2, 36, 37, 158, 189, etc.

15. Thomasiaus, *Schediasma*, 28; *Exercitatio*, 186.

stands in need of nothing for being what it is ontologically primary.”¹⁶ For Platonists, there was a hierarchy of self-sufficiency and being such that each of the lower strata in the hierarchy was supposed to depend on and be caused by the higher. In Plato’s *Republic*, the sensible things depend on the Ideas which themselves depend on the Good. For many of the philosophers who followed Plato, it was taken as obvious that unity and perfection were intimately related to self-sufficiency and being, so that the more reality something has, the more unified and perfect it would be. Both Christian and non-Christian Platonists assumed that there is a supremely perfect, wholly simple, and unified being on which all else depends. The implication was that only the highest being was wholly perfect, self-sufficient, simple, and real, and that the beings in the lower strata had diminishing degrees of these features. What is less a unity, for instance, is less real, and what is less real is constituted and explained by what is more unified and hence more real.

The third century philosopher, Plotinus (204/5–270), focused especially on the simplicity and unity of the Supreme Being and maintained that the greater the unity, the greater the reality, self-sufficiency, and perfection.¹⁷ He writes:

there must be something simple before all things, and this must be other than all the things which come after it, existing by itself, not mixed with the things which derive from it. . . . For if it is not to be simple, outside all coincidence and composition and really one, it could not be a first principle, and it is the most self-sufficient, because it is simple and the first of all: for that which is not the first needs that which is before it, and what is not simple is in need of its simple components so that it can come into existence from them.¹⁸

From our twenty-first-century perspective, it is difficult to grasp why unity or simplicity should be the key metaphysical and ontological notion. Nor is it easy to construct a satisfactory justification for this assumption. There seems to be a cluster of beliefs that motivate it: that eternity and immutability are the marks of true being and true perfection, that utter simplicity excludes the possibility of parts and the possibility of change, and that simplicity implies independence and self-sufficiency. From such assumptions, it is supposed to follow that a wholly simple being is eternally, immutably, and independently itself.

Many thinkers were loath to characterize the Supreme Being. Some maintained that language was inadequate, while others argued that to predicate anything of it was to make a division between subject and property and thereby to suggest a less than perfect unity. Although such thinkers often deemed it improper to attribute specific positive features to the divinity, they nonetheless believed that the Supreme Being contained every positive

16. Eyjólfur K. Emilsson, “Cognition and its Object,” 245.

17. See *Enneads* III.8.10.20–26; VI.2.11.9–18; VI.9.1.14.

18. V. 4.1.6–15. With some minor variations, translations are by A.H. Armstrong, *Plotinus: Enneads*. For a very helpful account of the intuition behind this notion of unity, see Emilsson, *Plotinus on Sense Perception: A Philosophical Study*, ch. 1.

attribute without distinction or division. In this sense, the divine may be thought of as a storehouse of being within which there is neither distinction nor division; there can be a distinction or division within being only “outside” the divine.

Let’s summarize the account of the Supreme Being offered here in the following way:

- The *Supreme Being Assumption* claims that there is a wholly perfect, self-sufficient, and unified being on which all else depends and, moreover, that each of the features of unity, self-sufficiency, perfection, and reality is a function of the other.

3. Plenitude

According to Plotinus, the “unbounded” perfection of the One is such that it “overflows” with being. This overflowing has two features worth emphasizing here. First, as soon as something is produced or created, there is multiplicity in that the being and perfection of the One is manifested in diverse ways. For Plotinus, when the being of the One overflows, it produces the world of Ideas. Although there are multiple Ideas, as a group they are as unified as anything can be other than the One itself. In the words of one commentator, they are “a unity-in-multiplicity.”¹⁹ The being of the world of Ideas itself overflows and eventually becomes the multitude of things in the material world. The second point to emphasize about the overflowing of the Supreme Being is that according to many Platonists, everything that can exist will exist. This assumption, often called the *Principle of Plenitude*, maintains that when the One overflows with being, it does not stop until all possible reality is produced. Plato had suggested in the *Timaeus* that the sensible world would be incomplete if it did not contain all possible creatures.²⁰ Plotinus retains this idea and suggests that diversity of being is a good thing. There will be as much being and as many kinds of being as possible. For Plotinus, the One emanates the fullness of its being continually, so that every possibility exists. He writes: “it is not possible for anything else to come into being: all things have come into being and there is nothing left.”²¹

A problem arises at this point: because a commitment to the widest possible diversity of being entails that some parts of the world will be less good than others, the products of the perfect being will contain imperfections. The solution to the problem embraced by most Platonists was that the greater goodness of the whole justified the imperfections of some of its parts.²² In his classic study of the Principle of Plenitude in the history of western ideas, Lovejoy highlights this striking assumption and identifies

19. Armstrong, “Plotinus,” 241. 20. *Timaeus*, 29e–31b, 39e.

21. *Enneads*, V.5.12.46–47.

22. See *Enneads*, II.9.13.1–5, 25–33; III.2.14.6f. For a discussion of this theme in the history of ideas, see Arthur Lovejoy, *The Great Chain of Being*; for a discussion of it in Plotinus, see Wallis, *Neoplatonism*, 64–65.

Augustine as one of its main sources.²³ Many philosophers considered it better that a variety of different kinds of things at different levels of perfection exist than that fewer kinds of things of higher perfection do so. The metaphysical insistence that the world is as full of diverse being as possible persisted for centuries; it was surely a cornerstone of scholastic conceptions of the created world. One of the nicest examples of this Platonist approach to plenitude among our scholastic heroes is found in Aquinas.²⁴ In Book II of his *Summa Contra Gentiles*, he offers several arguments for this assumption. Two of these are particularly relevant to us. Aquinas writes:

Since every agent intends to introduce its own likeness into its effect, so far as the effect can receive it, an agent does this the more perfectly, the more perfect [the agent] is itself. . . . But God is the most perfect of agents; therefore it will belong to him to introduce His likeness into created things most perfectly, so far as befits the nature of the created thing. But created things cannot attain to a perfect likeness of God so long as they are confined to one species of creature; because, since the cause exceeds the effect, what is in the cause simply, and unifiedly is found in the effect in a composite and multiple fashion. . . . Therefore, the presence of multiplicity and variety among created things was necessary so that the perfect likeness of God might be found in things according to their manner of being.²⁵

The multiplicity and variety of things is the best way for the Supreme Being to introduce its likeness into the created world. Aquinas offers an explanation as to why this is the case:

Moreover, just as things made from matter lie in the passive potentiality of matter, so things made by an agent must exist in the active power of the agent. . . . Therefore, if any agent whose power extends to various effects were to produce only one of them, its power would not be so completely actualized as by producing several. Now, by the fact that the active power is actualized, the effect receives the likeness of the agent. Therefore the likeness of God would not be perfect in the universe if there were only one grade of being.²⁶

In order for the full power and perfection of the Supreme Being to be actualized, it is necessary that it manifest those features in a variety of ways. An analogy may help. The most perfect chef in the world cannot manifest her perfections merely by making pastries; she must also produce salads, sauces, and grilled vegetables. Similarly, the Supreme Being cannot manifest its perfections merely by making angels and majestic mountains; it must also create armadillos, rodents, and slugs. Only by such means will the full range of its potential and power be apparent. As Aquinas concludes, "For this reason, then, there is distinction among created things: they receive God's likeness more perfectly, by being many, than by being one." But there

23. See Lovejoy, *The Great Chain of Being*, ch. 3, esp. 76–84.

24. It is important to emphasize at the outset of any discussion of Aquinas in this context that his account of creation and of the relation between God and creatures differs in many ways from the standard Platonist approach (say, that of Plotinus). For a discussion of some of these issues, see Norman Kretzmann, "A Particular Problem of Creation."

25. *Summa Contra Gentiles* II, 45 [2]. 26. *Ibid.* II, 45 [3].

is more than one way of “being many.” Aquinas insists that difference among species is better than difference among individuals. He continues:

the goodness of the species transcends the goodness of the individual, as form transcends matter; therefore the multiplication of species is a greater addition to the goodness of the universe than the multiplication of individuals of a single species. The perfection of the universe therefore requires not only a multitude of individuals, but also diverse kinds, and therefore diverse grades of things.²⁷

The diversity of kinds of being and of grades of being is a good thing. As Lovejoy nicely summarizes the point, “the thesis of the inherent and supreme value of variety of existence as such” and “the assumption that the more essences, regardless of their rank in the scale, there are realized in the universe, the better it is” was to “have momentous consequences.”²⁸

But we must not think that diversity by itself is the primary good-making criterion. In the second argument that interests us, Aquinas considers the interrelation among creatures:

But there is more. The highest degree of perfection should not be lacking in a work made by a supremely good worker. But the good of order among diverse things is better than any of the members of an order, taken by itself. For the good of order is formal in respect to each member of it, as the perfection of the whole in relation to the parts. It was not fitting therefore that God’s work should lack the good of order. And yet, without the diversity and inequality of created things, this good could not exist.²⁹

The basic point here is important for our purposes: the goodness of the products of the Supreme Being is more than just a summation of the goodness of the creatures; the goodness of the world is also a function of the orderly relations among creatures. Whether Jewish or Christian, ancient or medieval, theists who accepted the Platonist assumption that the goodness and perfection of the Supreme Being flowed into its creatures also assumed that a primary aspect of that goodness was the order or harmony among creatures. For example, the first-century Jewish theologian, Philo of Alexandria, claims not only that “virtue is, and will be, and has been in everything,”³⁰ he also insists that God has constructed things so that “our whole system, like a melodious chorus of many men, may sing in concert one well-harmonised melody composed of different sounds well combined.”³¹ As Aquinas succinctly makes the point more than a millennium later: “For each thing in its nature is good, but all things together are *very good*, by reason of the order of the universe, which is the ultimate and noblest perfection in things.”³²

For philosophers like Philo and Aquinas, the goodness in the order of

27. Ibid. II, 45 [6]. 28. Lovejoy, *The Great Chain of Being*, 76.

29. *Summa Contra Gentiles* II, 45 [8].

30. Philo, *On the Migration of Abraham*, XXII 126: Yonge 265. All references to Philo are from *The Works of Philo*, trans. by C. D. Yonge.

31. Ibid. XVIII 104: Yonge 263. 32. Aquinas, *Summa Contra Gentiles* II, 45 [10].

God's creation is greater than the sum of the goodness of its parts. That this order is supposed to increase the goodness of the world and be the "noblest perfection" is clear; that philosophers from Philo to Leibniz conceive this relation in aesthetic terms is also evident. In other words, when the creatures are taken independently of one another and the goodness of each considered, the sum is less than the goodness of the same creatures taken as an interrelated whole. It would seem then that the "order of the universe" is (at least partly) comprised of the relations among creatures, and that somehow those relations are good-making in a way that exceeds the mere summation of the goodness of the creatures taken independently of one another. Let's consider an interpretation of this order among creatures which is consistent with the comments made by Leibniz's Platonist predecessors and which will properly introduce the young Leibniz's understanding of that order.

Let's begin by returning to the example of our perfect chef. The goodness of what she produces is not due merely to the excellence and variety of her products, but to their complementary arrangements. The creamy smoothness of the sauce will perfectly enhance the crispness of the vegetables: neither is as good without the other, each perfectly suits the other. In fact, the relation between the sauce and the vegetables is such that the very same sauce would not complement anything as well as it complements those vegetables: it would be too velvety for the fish, too sweet for the potatoes. The basic intuition here is that each element is good in itself and yet is made better through its relation to the other. So far, so good. But there is something missing in this example. Vegetables and sauces are not conscious and cannot respond to the perfect culinary harmony of their relation. A conscious individual is able to feel pleasure and pain in a way that a plate of vegetables (presumably) is not. Once we add consciousness to our recipe, we discover other dimensions to the ordering among creatures. Given the assumption articulated above about the goodness in the world, it is not at all far-fetched to assume that goodness among conscious beings encourages more goodness. The basic assumption here is that goodness begets goodness. Good behavior encourages the person who does the good: Wanda sees how well her children respond to her kindness and patience and is thereby both pleased and encouraged. Furthermore, good behavior encourages the person who merely observes it: Wanda is courageous in the face of great difficulty and inspires those around her to do the same. By being good, she makes those related to her better. One way of capturing the assumption that the goodness of the world encourages more goodness is as follows: for every being S that has an *Enhancement Relation* to a being R, the relation of S to R is such that an increase in the goodness of S will promote an increase in R which is non-reciprocal (that is, the increase in R will not then promote an increase in S). Assuming that human virtue is a good thing, and that the more human virtue there is in the world, the better the world is, it would seem to follow that the goodness of a world would be partly a function of its enhancement relations: the more relations there were and the easier it was

for individuals to benefit from the benevolence of others, the better the world would be. For example, let's assume that Wanda, who is wonderfully good but who suffers from a severe case of agoraphobia, spends most of her time holed up at home watching C-SPAN and weeping for the sins of humanity, about which she is psychologically incapable of doing anything. Because of the limited enhancement relations in Wanda's world, no one benefits from her enormous goodness. But suppose the enhancement relations were different and somehow Wanda's deep concerns for the state of the world were communicated to the occupants of her neighborhood so that her neighbors could be moved by her sympathy, if only unconsciously. The more Wanda frets over the poverty in her city, the more her neighbors find themselves worried enough to do something about it. One could argue that the enhancement relations of the latter world add to its perfection. In such a world, Wanda's goodness is communicated to others and thereby increases the total goodness in the world.

It is not my concern to show that Plotinus, Philo, or Aquinas was committed to the Enhancement Relation as articulated here. They may not have been. But I would like to claim that this relation helps to explain how the goodness of a world is able to be greater than the sum of the goodness of its parts and yet how the goodness of its parts contributes to that more general goodness. If the individuals of a world cannot contribute to the goodness of one another and therefore cannot contribute to the overall goodness of the world, then the world does not seem ordered or harmonized in the way Leibniz's predecessors apparently desired. In short, given the relevant assumptions about goodness and virtue articulated here, it seems to follow that the goodness of a world would be partly a function of the nature of the Enhancement Relations among creatures.

For the sake of simplicity, let's summarize these points about the goodness in the created world as follows. Until we turn to Leibniz's texts, our account must remain somewhat vague.

- The *Principle of Harmonized Plenitude* assumes that the goodness of the world is partly a function of the variety of the beings within it, partly a function of the sum of the goodness of the beings within it, and partly a function of the order among those beings where the latter is understood primarily in terms of the Enhancement Relation among the beings. The *Enhancement Relation* is as follows: for every being S that has an Enhancement Relation to a being R, the relation between S and R is such that an increase in the goodness of S will promote an increase in R, which is non-reciprocal.

4. The Supreme Being as transcendent and immanent, as unity and multiplicity

One of the most basic assumptions of the Platonist account of creation is that the being of the One is so abundant that it necessarily overflows and

thereby produces what there is. Given that Judeo-Christian orthodoxy demands the free choice of God and therefore implies (at least) that the Supreme Being could have chosen *not* to create the world, the Platonist creation story seems to stand in dramatic conflict with the Judeo-Christian one. To put it simply, the one story claims that the abundance of being is so great that it must overflow; the other requires that however abundant the being, it need not do so. Regardless of how counterintuitive the idea of controlled or partial overflowing seems to be, the early Christians embraced it. Nor is that all. The Platonist story of creation posed another problem for early Jewish and Christian thinkers. Orthodoxy demanded that the creation occur “in the beginning.” It was with enormous philosophical finesse that theologians like Philo of Alexandria (ca. 25 BC–50 AD) and Augustine (354–430) managed to transform the ancient Platonist account into one that cohered with the Bible. Both the Jewish Philo and the Christian Augustine conceived of the One as a mind that contained all positive essences or Ideas. By such means, Philo and Augustine found a way to combine the Biblical creation story with the Platonist one. From Augustine onward, the standard Christian conception of the One was of a perfect and infinite divine mind that contained the Ideas and that “in the beginning” freely created a world modeled on them.³³ We will have the opportunity to consider some of the details of this conception in what follows.

Pagan and non-pagan Platonists differed about the details of their creation stories, but they were in general agreement about the result: everything in the created world was understood to be a manifestation of the divinity.³⁴ The basic idea was that the diversity in the world was the essence of the Supreme Being variously manifested. Some obvious problems arise at this point concerning the relation between the transcendent One and its products. In brief, for the Platonists, the Supreme Being is supposed to be wholly self-sufficient, yet it is said to be *in* everything. Creatures are supposed to be finite and limited, yet they are said to be *in* the Supreme Being and to share its features. That is, the Supreme Being is supposed to be *in* the creatures, and yet they are also said to be *in* it. What are we to think?

33. In the *Timaeus* (29a), there is the suggestion that the Forms are somehow in the intellect of the creator, who then models the things of the world on them.
34. The same idea appears in the thought of many Jewish kabbalists, where the divine attributes are supposed to emanate to all levels of creation so that every being participates in all of them. For a recent account of kabbalistic thought, its development, and complications, see Moshe Idel, *Kabbalah: New Perspectives*, esp. ch. 6. Christian kabbalists like Raymond Lull and Johann Reuchlin, who were widely known in Germany in the seventeenth century, followed in this tradition and maintained that every creature exemplified all the divine attributes. For Lull, each creature is infused with all the divine features so that one can grasp them at every level of being. Johann Reuchlin was a German student of Pico della Mirandola and the first full-fledged modern Christian kabbalist. For a brief introduction to Reuchlin, see Moshe Idel, “Introduction to the Bison Book Edition” and G. Lloyd Jones, “Introduction,” both in Martin Goodman and Sarah Goodman, trans. *Johann Reuchlin: On the Art of the Kabbalah*. There is a good deal of secondary literature written on Lull. For a basic introduction, see Francis A. Yates, *The Art of Memory*.

While I dare not attempt a full analysis of the relation between the Supreme Being and its products, I would like to summarize certain aspects of that relation. There are three closely related questions that are particularly relevant to Leibniz: (1) how can the Supreme Being or the One be transcendent from its products while they are *in* it?; (2) how can the Supreme Being be both transcendent from its products and immanent in them?; and (3) how can the One be both the unity and the multiplicity in the world? Answers to these questions will place Leibniz's own conception of the relation between God and creatures in its proper perspective.

Before facing these questions, however, it will be important to remind ourselves that they apply with equal force to the Judeo-Christian God of the Bible. As Paul writes to the Ephesians, there is "one God and Father of all, who is above all, and through all, and in all" (Ephesians 4:6). In Acts we are told: "For in him we live and move and have our being" (Acts 17:28); and in the Book of Psalms, we find that the "Lord, art most high over all the earth" (Psalms 97:9) and yet is intimately related to all things. In Psalm 148 (3–8), the entire universe is told to pay tribute to God who not only created all things, but also is their abiding source:

Praise him, sun and moon; praise him, all you shining stars.
 Praise him, you highest heavens, and you waters above the heavens.
 Let them praise the name of the Lord! For he commanded and they were created;
 And he established them for ever and ever; he fixed their bounds which cannot be
 passed.
 Praise the Lord from the earth, you sea monsters and all deeps;
 Fire and hail, snow and frost, stormy wind fulfilling his command.

In the *Confessions*, Augustine faces these problems head on and then explains how he discovered the key to their solutions. At the very beginning of the book, he worries aloud to God about precisely our questions: "Without you, whatever exists would not exist. But does what exists contain you? I also have being . . . which I would not have unless you were in me. Or rather, I would have no being if I were not in you." To add to the difficulty, Augustine agrees with Paul in his description of God: "For from him and through him and in him are all things" (Romans 11:36). The torment that such questions caused Augustine persisted for years, and ended only when he realized how to conceive God. It was the Platonists who effected that realization. Augustine explains: "[b]y reading these books of the Platonists I had been prompted to look for truth as something incorporeal."³⁵ What Au-

35. *Confessions*, VII, xx (26). Scholars have long argued about which Platonist writers most influenced Augustine at this crucial moment; the debate has mostly centered on Porphyry and Plotinus. John Rist argues persuasively that it was Plotinus "who led Augustine" to the view that "Christianity can subsume Platonism" and that Augustine's use of Platonism has "led us to think of an almost essential relationship between Platonism and an intellectual explanation of Christianity itself." See Rist, "Plotinus and Christian Philosophy," esp. 405ff. In his edition of the *Confessions*, Henry Chadwick claims that the text "constantly echoes" the thought of Plotinus. See Chadwick's Introduction, xxiii, and the editor's notes in his ed. of the *Confessions*.

gustine came to understand and what we need to grasp is how it is “that all finite things are in you [God]”³⁶ and yet “derive their being from you.”³⁷

How can the divine be both transcendent and immanent? The problem is acute: according to Plotinus, the One is “alone by itself” and simple, while it is also “everywhere” and “fills all things.” He writes: “How then do all things come from the One, which is simple and has in it no diverse variety?” The solution to the problem lies in a distinction between the One insofar as it is supremely self-sufficient and the One insofar as it is the principle on which all else depends. Plotinus explains: “The One is all things and not a single one of them: it is the principle of all things, not all things, but all things have that other kind of transcendent existence.”³⁸ The crucial point here is that the One is “all things” insofar as it is their principle or source and it is “not a single one of them” insofar as it is the perfect, self-sufficient, and unified reality. He continues: “All these things are the One and not the One: they are he because they come from him; they are not he, because it is in abiding by himself that he gives them.”³⁹ The One is transcendent in that it is self-sufficient and in need of nothing else. Plotinus writes in a passage we have seen: “there must be something simple before all things, and this must be other than all the things which come after it, existing by itself, not mixed with the things which derive from it.”⁴⁰ But the One is also immanent in that it is the source of everything else and that on which everything constantly depends: the One “is the principle of all things . . . because as principle it keeps them in being . . . and because it brought them into existence.”⁴¹ Such texts suggest a solution to our general problem as to how the One can be both transcendent from its products and immanent in them. In order to understand this, we need only recognize what one scholar has called their “nonreciprocal dependence.”⁴² The One is transcendent in that it exists wholly independently of all its creatures and needs nothing else to be what it is. For creatures, this is not the case; they depend fully and constantly on the One.

To conceive the complicated way in which the One is immanent in the world, we must turn to our first question: how the Supreme Being or the One can be transcendent from its products while they are *in* it? To grasp how the products of the One are *in* it while it exists independently of them,

36. *Confessions* VII, xv (21). 37. *Ibid.*, VII, xx (26). 38. *Enneads*, V.2.1.1–4.

39. *Ibid.*, V.2.2.24–26. 40. *Ibid.*, V.4.1.6–15. 41. *Ibid.*, V.3.15.27–29.

42. The phrase ‘nonreciprocal dependence’ is used by O’Meara who summarizes his account in the following way: “Reality is a structure of dependence, the posterior depending on the prior, being constituted by the prior, incapable of existing ‘without’ the prior which can exist without it. The prior is thus part of, or in, the posterior (as constitutive of it), just as the posterior is potentially in the prior (as coming from it): causes are ‘in’ their effects and effects are ‘in’ their causes. But while a part of the posterior, the prior is also apart from it as independent of it. Thus the prior is both immanent in the posterior and transcends it: The One is ‘everywhere’ and ‘nowhere.’ As independent and as prior, the cause is different from the posterior, its effect, prior in perfection and more powerful: causes [which are prior ‘by nature’] . . . are superior to their effects.” See Dominic J. O’Meara, “The Hierarchical Ordering of Reality in Plotinus,” 79.

one must understand that their nature and being comes from the One and never exist independently of it while it exists independently of them. Think of a fountain that miraculously hovers fifty feet above the Las Vegas strip, and though unconnected to any source, spews forth streams of ice cold water. The existence of the fountain in no way depends on the water, and yet the nature and being of the water depends entirely on the fountain. Like the fountain, the One exists independently of what flows from it; like the water, the products of the One continually depend on their source.⁴³ In this case, the products of the One and the water of the fountain “exist in” their source in that their very existence depends on it. The ‘exists in’ relation here consists in ontological dependency. In this sense, a being B exists in a being A just in case the whole being and nature of B depends continually on A. To speak metaphorically, B exists in A because the being and nature of B flows from A.

Let’s now turn to our second question, namely, how the Supreme Being can be both transcendent from its products and yet in them? According to Plotinus and other Platonists, the One is entirely apart from and “beyond” its products and yet “present to” them and constitutive of them. In the fifteenth century, Marsilio Ficino makes the point dramatically in a brief dialogue between God and the soul. In Ficino’s dialogue, God explains: “I am both with you and within you. I am indeed with you, because I am in you; I am in you, because you are in me. If you were not in me you would not be in yourself, indeed, you would not be at all”. God continues: “Behold, I say, do you not see? I fill heaven and earth, I penetrate and contain them. . . . Behold, do you not see? I pass into everything unmingled, so that I may surpass all; for I am also able to enter and permeate at the same time, to enter completely and to make one, being unity itself, through which all things are made and endure, and which all things seek.” In brief, God exclaims: “in me are all things, out of me come all things and by me are all things sustained forever and everywhere.”⁴⁴ To grasp how the One is transcendent and yet present to its products, we have to turn to the causal relation between it and them. In Plato’s *Republic*, the Good may be interpreted as the cause or source of the Ideas which themselves may be seen as the cause or source of the sensible things. In the Platonist literature, there are three standard ways to describe the causal relation between higher and lower strata in the ontological hierarchy. In the participation relation, the individual on the lower stratum is supposed to participate in that of the higher; in the model-image relation the higher is said to generate the lower as an imperfect image of itself. The third way of describing the causal relation in the hierarchy and the one most relevant to Leibniz is that of emanation. Drawing on Plato’s analogy to the sun in the *Republic*, and assuming the other causal notions, this relation compares the One to the sun whose rays flow from it. As

43. Plotinus’s famous examples are of the sun, which emanates light, and the fire, which emanates heat.

44. *The Letters of Marsilio Ficino*, Vol. I, 36.

Plotinus writes: "The visible universe, then, is properly called an image always in the process of being made . . . ; just as, as long as the sun exists, all its rays will shine forth."⁴⁵ It is important for our purposes that a lower level object will have a property in an inferior way to a higher level object. The attributes or properties of a higher sphere are transmitted to those of the lower, but in a less perfect form.⁴⁶ Philo makes the basic point well when he writes: "the mind of the universe created the universe, and the Creator is better than the created, therefore it can never be contained in what is inferior to itself. . . . [I]t is not suitable for the father to be contained in the son."⁴⁷ According to Philo, although "the living God contains everything . . . , it is impiety to suppose that he is contained by any thing."⁴⁸

Oversimplifying somewhat, we can say that if the perfect A has an attribute f, then A can emanate f-ness to a lower being B. In the emanative relation, A loses nothing while B comes to instantiate f-ness. A remains transcendent and pure, while B becomes an imperfect image of the perfect f. The emanative process is assumed to be continual so that B will participate in f-ness and have f imperfectly if and only if A acts or emanates f-ness. It is important to emphasize the fact that in the emanative causal relation (as with the other two), the f of A is greater and more perfect than that of B and yet that the f in B resembles its cause. Moreover, it is important for our discussion of Leibniz to note that emanative causation is not restricted to the One: other, less perfect beings, may produce their products through emanation. For Platonists like Plotinus and Proclus, any act of production in the created world is a case of "imitating the One." Proclus puts it neatly: "Every productive cause produces . . . while itself remaining steadfast. For if it imitates the One, and if the One brings its consequents into existence without movement, then every productive cause has a like law of production."⁴⁹ It is supposed to follow from this account that the cause is "greater" than the effect and the effect resembles the cause.

We are now prepared to explain how it is that the One is transcendent from its products and yet in them.⁵⁰ The perfection and transcendence of

45. *Enneads*, II.3.18.18–23.

46. As Emilsson puts it in *Plotinus on Sense Perception*: "It is an underlying feature of Plotinus' thought that the explanation of any feature must be in virtue of something that possesses the feature in question in a 'more perfect' way than the thing to be explained" (14).

47. Philo, *On the Migration of Abraham*, XXXV, 193: Yonge 272. As a Jewish theologian, Philo was not interested in the metaphysics of the trinity. The comment here about father and son is not a reference to that doctrine.

48. *Ibid.*, XXXII, 182: Yonge 270.

49. For some of Plotinus' comments on emanative causation, see *Enneads*, V.1.6.37–39, IV.3.10.32–42, V.5.9.1–10. The account of emanative causation offered here is based on but varies slightly from the excellent discussion of Eileen O'Neill in her "*Influxus Physicus*." For more on emanative causation in Plotinus, see John Bussanich, "Plotinus's Metaphysics of the One," 46–58, and O'Meara, "The Hierarchical Ordering of Reality in Plotinus," sects. II, III.

50. By combining the views of Plotinus and others, I am slightly misrepresenting the views of the former. As E. Emilsson has pointed out to me, Plotinus rarely says that the One "exists in" anything, but instead talks about the One being "present to" things.

the One remains unchanged while it continually emanates its attributes to its products, which then have those attributes in a manner that is inferior to and hence wholly different from the One. Recent scholars have insisted, in a way that is quite relevant to Leibniz, that Plotinus is not a pantheist and does not believe that the being of the One constitutes the *being* of its products. The causal theory of emanation reveals how this is so. As Plotinus writes in a passage quoted above: “all [created] things have that other kind of transcendent existence. . . . [T]he One is simple and has in it no diverse variety.”⁵¹ For any attribute of a creature, that attribute is derived from the One and yet the attribute exists in the creature in a way quite distinct from that of the One. Plotinus puts it nicely when he explains that the One “is like the things, which have come to be” except that they are “on their level” and “it [the One] is better.”⁵² The One is *in* the creatures in the sense that it emanates its attributes to them; it remains transcendent from them because it neither loses anything in the emanative process nor shares any of its perfections with them. It is perfect; they are not. Plotinus writes: “[the One] must be other than all the things which come after it, existing by itself, not mixed with the things which derive from it, and all the same able to be present in a different way to these other things.”⁵³ Elsewhere, he explains that “the One is always perfect” and “its product is less.”⁵⁴

The Platonist conception of the causal relation between the Supreme Being and its creatures helps to explain how the Judeo-Christian God can be, in Paul’s words, “one God and Father of all, who is above all, and through all, and in all” (Ephesians 4:6). As Augustine makes the point in his *Confessions*:

I considered all the other things that are of a lower order than yourself, and I saw that they have not absolute being in themselves, nor are they entirely without being. They are real in so far as they have their being from you, but unreal in the sense that they are not what you are. For it is only that which remains in being without change that truly is. . . . [God] himself ever unchanged, he makes all things new.⁵⁵

The causal relation between the Supreme Being and its products explains how the One can be transcendent and yet be in its products. Here the ‘exist in’ relation is to be understood in terms of emanation, where the basic idea is that attributes of the One emanate to its products, and in that sense exist in them. The One remains pure and transcendent while its attributes or properties “exist in” the creatures. The crucial point to understand is that the properties exist in the products in a manner wholly different than the

51. *Enneads*, V.2.1.3–5. Emilsson has pointed out to me that it is debatable whether or not Plotinus himself accepted emanation as a theory, and that the causal relation between the One and its products can be thought of in different terms. On this topic, see Emilsson’s very helpful paper, “Plotinus on the Intelligible.” Whether Plotinus accepted this theory or not is not so important here as is the fact that he was interpreted by his medieval and early modern interpreters to have done so.

52. *Ibid.*, VI.8.14.33–34. 53. *Ibid.*, V.4.1.6–8. 54. *Ibid.*, V.1.6.39–40.

55. *Confessions* VII, xi (17). Also see XII, vii (7), xi (11).

way they exist in the One. The perfect being A emanates f-ness to B so that B participates in f-ness and f-ness is in B, but the f-ness in B is inferior to the f-ness in A. A has f perfectly; B has it imperfectly.

With this account of the causal relation between the Supreme Being and its creatures in hand, we are prepared to answer our third question, namely, how the transcendent One can be both the unity and multiplicity in the world. We touched on both of these issues in the last section. That the One is the multiplicity in the created world is fairly straightforward: when the One overflows, it necessarily produces a multiplicity in that the being and perfection of the One is manifested in diverse ways. The One exists in the multiplicity in the sense that it is immanent in its products.⁵⁶ But the creatures also necessarily instantiate the unity of the One. For our purposes, it will be helpful to distinguish between two senses in which the unity of the One is in the world. First, the unity of the Supreme Being is in every existing thing. We have noted the close connection between unity and being. According to Plotinus, “nothing is real which is not a unity” and moreover “a thing is a unity by the presence of the One.”⁵⁷ Each existing thing will be a unity not by virtue of itself but by virtue of the presence in it of the One itself. Plotinus explains: “All these things are the One and not the One: they are he because they come from him; they are not he, because it is in abiding by himself that he gives them.”⁵⁸ The Supreme Being remains transcendent while emanating its unity to each of its products. The unity of the One is in the world in that it is in each of its creatures, although the latter have a less perfect unity than the One itself, which is the only pure unity. Second, the unity of the One is in the totality of creatures. The interrelations and harmony of the parts of creation are due to the One. We will discuss this sense of unity at greater length in the next section.

Much has been said in this section that is relevant to our analysis of Leibniz. It will be helpful to summarize the most important of this material.

- The *Theory of Emanative Causation* claims that for a being A that is more perfect than a being B, A can emanate its attribute f-ness to B in such a way that neither A nor A's f-ness is depleted in any way, while B has f-ness, though in a manner inferior to the way it exists in A. The emanative process is continual so that B will instantiate f-ness if and only if A emanates f-ness to it.
- The (tentative) *Creaturely Inferiority Complex* asserts that every product of the Supreme Being contains all the attributes that constitute the divine essence, though the product instantiates each of those attributes in a manner inferior to the way in which they exist in the Supreme Being.

In our discussion of plenitude in the last section, we saw that the goodness of the world is partly a function of the variety of being within it. The

56. For more on multiplicity, see *Enneads* III.8.9.3; IV.9.4.7-8; V.4.1.5-15; V.6.3.19-22; VI.9.2.31-2.

57. *Ibid.*, VI.6.13.50; also see VI.6.14.27-28. 58. *Ibid.*, V.2.2.24-29.

Creaturely Inferiority Complex helps to explain why this might be the case. If we assume that every product of God contains all the divine attributes and if we assume that no single product affords more than a partial view of those attributes, then it would be reasonable to believe that the world would be made better by a variety of expressions or instantiations of those attributes. It would also be reasonable to assume that one of the ways in which creatures differ from one another is in the clarity of their instantiation of those attributes. One might think for example that the glory of God is more clearly manifested in a salamander than in a slug, and more clearly still in Socrates. As we will see in the next chapter, such assumptions were embraced by the young Leibniz.

5. Reflective harmony and sympathy

It is now time to turn our attention to the interrelations among the parts of the world. There are two notions that are extant in Platonism and that bear strongly on Leibniz. The first concerns the unity that was believed to exist among all the parts of the created world. I said earlier that the unity of the One is immanent, not just in every individual product of the One, but also in the whole of creation. The ancient notion of sympathy finds its feet in the idea that there is a fundamental unity among all the emanations of the One. Although originally a Stoic theory about the close interrelations among the parts of nature, the Platonists extended the idea in interesting ways.⁵⁹ For the Stoics, the cohesion among the parts of an individual body and the cohesion among the parts of the world were to be explained in terms of the sympathy among the parts. Some of the Platonists expanded on this idea and talked about the parts of the world as related in such a way that every part was in communication with every one. In other words, the result of this unity among the parts of the world is a cosmic sympathy such that an occurrence in one part of the world “must produce a sympathetic reaction in every other part.”⁶⁰ In his discussion of the relation between individual souls and *Nous* or what is sometimes called the *World Soul*, Plotinus makes it clear that the interconnection among the parts of the world is based ultimately in their having the same source. He writes:

How, then, is there one substance in many souls? Either the one is present as a whole in them all, or the many come from the whole and one while it abides [unchanged]. That soul, then, is one, but the many [go back] to it as one which gives itself to multiplicity and does not give itself; for it is adequate to supply itself to all and to re-

59. For a classic account of Stoic physics in general and their notion of sympathy and pneuma in particular, see S. Sambursky, *Physics of the Stoics*, esp. ch. 2. As Sambursky makes clear, the later Stoics tended to identify the pneuma with the divinity (36–42). It would seem then that at least some Stoic explanations for sympathy did not differ greatly from those offered by the Platonists.

60. Wallis, *Neoplatonism*, 70. Interestingly, Wallis insists here that for Plotinus “there is a pre-established harmony linking the destinies of all souls,” and notes that this is “echoed in the later philosophy of Leibniz.”

main one; for it has power extending to all things, and is not at all cut off from each individual thing; it is the same, therefore, in all.⁶¹

In section 3, I noted that for those theists who accepted the Platonist assumption that the goodness and perfection of the Supreme Being flowed into its creatures, it followed that the goodness of the world was partly a function of the orderly relations among creatures. We saw that not only is there goodness in all creatures, but also that there is goodness in the order among them. Indeed, according to Aquinas, “the order of the universe . . . is the ultimate and noblest perfection in things.”⁶² We now come to the same point from a slightly different angle. It should be clear that unity, like goodness, is manifest both in the individual creatures and in their interrelations. For someone who believes that every creature is a manifestation of the divine essence, it would naturally follow that there exists an order connecting each instantiation to every other. As Philo explains: “And being superior to, and being also external to the world that he has made, he nevertheless fills the whole world with himself; for, having by his own power extended it to its utmost limits, he has connected every portion with another portion according to the principles of harmony.”⁶³ This harmony among the “portions” of the divine is such that each responds to the activity and states of all the others. Moreover, as the Stoics insisted, there is even a greater affinity and sympathy among the parts of something with a unified structure. The parts of a single body in nature are in close sympathy with one another; the parts of an organic body even closer.

Let’s summarize the basic point here as follows:

- The *Relation of Sympathy*, which can be more or less, claims that each created being corresponds to the activity and states of all the beings.

The second relation that exists among the parts of the world is that of reflection. Whereas sympathy appears to hold true of all beings, reflection applies only to minds or mind-like beings. In his account of the realm of Ideas, Plotinus rejects the statuesque immobility of Plato’s world, and adds the striking notion that this world is “teeming with life” and that the Ideas themselves are mind-like. By attributing mental capacities to the Ideas, Plotinus offers a fascinating way of conceiving the interrelations among the multiple Ideas. For Plotinus, the Ideas are themselves capable of reflecting and, in a sense, of containing each other. In *On the Soul*, Aristotle had claimed that to think something was in a sense to contain it.⁶⁴ Plotinus apparently takes this feature of Aristotle’s philosophy of mind and applies it to the realm of Ideas. It follows that when Idea R thinks Idea Q and Q thinks

61. *Enneads*, IV.9.5.1–7. See also I.4.3.16–20. As these passages suggest, it is not obvious how Plotinus will be able to individuate among souls. For a recent discussion of this problem in Plotinus and references to other secondary literature, see Henry Blumenthal, “On Soul and Intellect,” 82–104, esp. 84–85.

62. Aquinas, *Summa Contra Gentiles* II, 45 [10].

63. Philo, *On the Posterity of Cain* V.14: Yonge 133. 64. *On the Soul*, Bk. III, ch. 7.

R, each in a sense contains the other. Because each Idea thinks all the others, each can be said to contain them. The different perspective that each Idea has on the others is just a different means to the interconnection or unity that exists among the Ideas. One scholar has claimed that this “unity-in-diversity” among the “community of minds” is “[t]he most strikingly original feature” of Plotinus’ account of the realm of Ideas.⁶⁵ Plotinus offers a marvelously vivid description of the interrelations among the Ideas:

Everything is clear . . . to everything, for light is transparent to light. Each, there, has everything in itself and sees all things in every other, for all are everywhere and each and every one is all, and the glory is unbounded; for each of them is great, because even the small is great: the sun there is all the stars, and each star is the sun and all the others.⁶⁶

It is important for our purposes that this reflective interconnection not be limited to the realm of Ideas. Individual souls are similarly related in that each is wholly present to all the others, although they are not fully conscious of the others, and the unity among souls is not as great as that among the Ideas. These last two points are interestingly related: individual souls may remain unconscious of the goodness and interconnections among things, stray from the path of virtue, and thereby isolate themselves from the others. Each soul nonetheless contains all the others and thereby constitutes a unity with them.⁶⁷ Let’s summarize the basic point here as follows:

- The *Theory of Reflective Harmony* claims that there is an interrelation among minds such that each mind thinks or reflects all the others so that each mind may be said to contain all the others.

The Theory of Reflective Harmony has obvious relevance to two points made earlier about the harmony and order among creatures. In the discussion of the Plotinian conception of the unity and multiplicity in the created world, I emphasized the fact that the One emanates its unity to the totality of creatures. I claimed that for any philosopher who took every creature to be a manifestation of the divine essence, it would naturally follow that there exists an order connecting every instantiation of the divine essence to every other. For example, according to Philo, the world is like “a melodious chorus” whose members “sing in concert one well harmonized melody composed of different sounds well combined.”⁶⁸

Moreover, the theory has obvious connections to the Principle of Harmonized Plenitude, especially to its idea that the goodness of the order among creatures is greater than the goodness of the sum of the individual creatures themselves. The Theory of Reflective Harmony offers an account of the interrelation among creatures that helps to explain how their order or interrelations could increase their goodness. According to the theory, every mind

65. Armstrong, “Plotinus,” 245. 66. *Enneads* V.8.4, 5–10.

67. *Ibid.*, III.4.3.22, IV.7.10.32–37, II.3.7, IV. 4.32ff.

68. Philo, *On the Migration of Abraham* XVIII, 104; Yonge 263.

is related to every other in the sense that a change in one is reflected in a change in the other. In our discussion of Harmonized Plenitude, we saw that the goodness of the world was partly a function of the order among created beings. I speculated there that this order involved the Enhancement Relation among them. According to the latter, for any being S that has an Enhancement Relation to a being R, the relation of S to R is such that an increase in the goodness of S will promote an increase in R that is non-reciprocal (that is, the increase in R will not then promote an increase in S). The Enhancement Relation is exactly what is needed to guarantee that the increased goodness in a world of reflective individuals will promote not just change, but change for the better. That is, since the Enhancement Relation claims that an increase in the goodness of one being will promote an increase in the goodness of those beings with which it has an enhancement relation, it follows that an increase in the goodness of any mind will be reflected in the increase in the goodness of every other. The conjunction of the Theory of Reflective Harmony and the Enhancement Relation entails that there is an Enhancement Relation among all minds. It also helps to make sense of the Platonists' claim that an order among individuals could add significantly to the goodness of the world. In a world in which the Enhancement Relation holds between all minds, each mind is capable of contributing much more to the goodness of the world than merely its present state of goodness: with every increase in its goodness, it contributes to the goodness of every other reflective mind.

In the discussion of the Creaturely Inferiority Complex, I emphasized the fact that one of the ways in which creatures might differ from one another is in the clarity of their manifestation of the divine attributes. If we suppose that creatures can instantiate that essence more or less clearly and that the clarity of the instantiation is a function of the goodness of the creature, then it would seem to follow that as a creature becomes better, it reflects the divine essence more clearly. In brief, the more perfection or goodness the creature has, the more like God it is. Given the interconnection and reflection among creatures, it would seem to follow that for any substance S, the greater the clarity of its instantiation of the divine, the greater its helpfulness to other substances in their ascent toward the divine. The helpfulness of a substance S to the moral development of other substances is a function of the clarity of its instantiation of the divine essence, which itself is a function of the goodness of S.

On the basis of this discussion, let's revise the Creaturely Inferiority Complex as follows:

- The *Creaturely Inferiority Complex* asserts that every product of the Supreme Being contains all the attributes that constitute the divine essence, though the product instantiates each of those attributes in a manner inferior to the way in which they exist in the Supreme Being and, moreover, the grade of perfection of a creature is related to the clarity of its instantiation of the divine essence.

6. Ideas and knowledge

Plato famously distinguished between being and becoming, where the eternal and immutable Ideas constitute the former while the temporary and mutable sensible objects constitute the latter. For Plato, the realm of being and the realm of the intelligible is the same so that the only objects of knowledge are the Ideas. The implication is that we cannot grasp the Ideas in sense perception. Many Platonists placed the Ideas, as objects of knowledge, within us. According to Plotinus, for example, the Ideas reside in us and are constantly present to us, although we are unaware of them because our surface consciousness is only one level of awareness. Although Platonists differed about the precise role played by the senses in the acquisition of knowledge, most agreed that the process of coming to know the Ideas was one of removing oneself from the mutable world of the senses and discovering the immutable Ideas within. The acquisition of knowledge was considered an arduous, internal journey that required rigorous intellectual and moral discipline. The point of philosophy, therefore, was to raise oneself above the petty concerns of this world, to concentrate on the eternal truths, and eventually to acquire knowledge of the Supreme Being.⁶⁹ For most theists, the acquisition of knowledge of the Ideas was a necessary step toward knowledge of God.

In his essay *On the Migration of Abraham*, Philo vividly describes this epistemological journey. He asserts that wisdom, which is the proper goal of humanity, “will never happen to you if you remain here dwelling among the objects of the external senses, and wasting your time among the distinctive qualities of the body.”⁷⁰ He distinguishes neatly between that “which is perceptible by the outward senses and [that which is] intelligible by the intellect,”⁷¹ and insists that only when we “quit the abode of the outward senses” and “set up the abode of the soul” can we “dwell in mind and intellect . . . among the objects of contemplation.”⁷² According to Philo, in the world of the sense, “the mind is . . . a fugitive” that has “left its own appropriate objects which are comprehensible to the understanding.”⁷³ He warns:

do not . . . employ yourselves in the investigation of the earth . . . , but rather seek to become acquainted with yourselves and your own nature, and do not prefer to dwell anywhere else, rather than in yourselves. For by contemplating the things which are to be seen in your own dwelling . . . you will . . . arrive at a correct knowledge of God and of his works. For you will perceive that there is a mind in you and in the universe.⁷⁴

69. See, e.g., *Enneads*, V.3.3.27–29, 42–43; IV.3.30.11–16. For a recent discussion of Plotinus’ views about physical reality, see Michael F. Wagner, “Plotinus on the Nature of Physical Reality.” For a thorough discussion of Plotinus’ account of sense perception, see Emilsson, *Plotinus on Sense Perception* and “Cognition and Its Object.”

70. Philo, *On the migration of Abraham*, V.28: Yonge 255.

71. *Ibid.*, XXXVII 207: Yonge 273. 72. *Ibid.*, XXXVIII 214: Yonge 274.

73. *Ibid.*, XXXVIII 209: Yonge 273. 74. *Ibid.*, XXXIII 185–86: Yonge 271.

In short, one must “rise up and leave the objects of the outward senses, and . . . go over to those of the intellect.”⁷⁵ For our purposes, it is noteworthy that Philo takes there to be (at least) two necessary steps in the acquisition of wisdom: first, we must consider “this invisible chain of harmony and unity, which connects all those parts” of the world,⁷⁶ and then God must “cause the light of truth to shine,”⁷⁷ so that our intellect can contemplate some of the Ideas. Following Plato’s distinction in Book VI of the *Republic*, Philo and others insisted that it was the faculty of intellect or understanding (*intellectus*) and not that of reason that could contemplate and grasp the truths.⁷⁸

Christian Platonists endorsed the steps in this epistemological journey. For Augustine, the objects of knowledge are to be found within one’s self.⁷⁹ In the *Confessions*, he writes to God:

These books [of the Platonists] served to remind me to return to my own self. Under Your guidance I entered into the depths of my soul. . . . I entered, and with the eye of my soul, such as it was, I saw the Light that never changes casting its rays over the same eye of my soul, over my mind. . . . What I saw was something quite, quite different from any light we know on earth. . . . It was above me because it was itself the Light that made me, and I was below because I was made by it. All who know the truth know this Light, and all who know this Light know eternity.⁸⁰

It is important that Platonists like Augustine thought of the mind as both the subject and object of knowledge, as what knows and what is known. In *On the Trinity*, Augustine writes that only “the mind can place itself into its own field of vision”⁸¹ and “be understood through its own thinking [cogitatio].”⁸² The mind, as thinking subject, can turn itself upon itself and attempt to contemplate the Ideas within itself. As subject, the mind is mutable and temptable; as object, it is immutable and pure in that it contains the Ideas. The “changeable” mind can only reach the “unchangeable” Ideas, as Augustine writes, “through the help of God.” The possibility of knowledge is grounded in God’s intimate presence in the human mind. Augustine explains: “God is wholly everywhere” and “the mind lives and moves and has its being in him.” The mind acquires knowledge “by turning towards the Lord, as to the light which in some fashion had reached it even while it had been turned away from him.”⁸³ But even with divine help, as he explains in the *Confessions*, “the power of my soul . . . belongs to my nature” and “I cannot grasp all that I am. The mind is not large enough to contain itself.”⁸⁴

75. *Ibid.*, IV 20: Yonge 254. 76. *Ibid.*, XXXIX 220: Yonge 274.

77. *Ibid.*, XIV 76: Yonge 260.

78. *Republic*, Book VI, 509d-511e. Of course, scholars debate the exact significance of the line analogy in Book VI, and the terminology concerning the faculty that grasps “the intelligibles” was not entirely set among Greek writers. Latin authors, however, were more in agreement in that the Latin ‘intellectus’ standardly designated the faculty that grasps the Ideas and eternal truths.

79. Augustine, *Confessions* VII, xx (26). 80. *Confessions*, VII, x.

81. *On the Trinity* XIV, vi (8). 82. *Ibid.*, XIV, xi (14).

83. *Ibid.*, XIV, xv (21). 84. *Confessions*, X, viii (15).

The goal of life, therefore, is to remove oneself as much as possible from the ties to the material world and to contemplate the eternal and immutable Ideas within. Because the mind is mutable and finite, it can never grasp the whole of its contents; with the help of God, however, it can grasp some part of it.

For the sake of simplicity, let's summarize the basic points here as follows.

- The *Epistemological Assumption* claims (1) that the mind is the object of knowledge in the sense that it contains the eternal truths or Ideas, (2) that the mind, which is mutable and finite, will become aware of those objects only if it both turns away from the material world and is aided by the divine light, and (3) that it is the intellect or understanding that is capable of grasping those truths.

7. Matter and the hierarchy of being

In the history of Platonism, the notion of matter has been extremely problematic. In the *Timaeus*, Plato suggests that sensible matter is a kind of receptacle into which the Ideas are placed. Here, the basic assumption is that matter is a form of privation or limitation, and so particular material instantiations of an Idea are necessarily imperfect. All the activity in the world comes from what is immaterial; matter lacks unity and form and contributes nothing positive. Such an account of matter does not sit well with the Supreme Being Assumption, which claims, among other things, that each of the features of unity, self-sufficiency, perfection, and reality is a function of the other. Since matter appears to lack unity, perfection, and self-sufficiency, it would seem to follow that it is also devoid of being and goodness. The problematic status of matter is nicely exemplified in the thought of Plotinus, where it can be interpreted as both something and nothing, as both good and evil. For Plotinus, the fundamental problem is that on the one hand, matter, as the final emanation of the One, would seem to have some perfection, while on the other hand, matter, as something wholly ununified and mutable, would seem to have none. There is no doubt that there is a sense in which matter, for Plotinus, is the complete negation of everything good: he describes it as something that “corrupts”⁸⁵ and as “non-being.”⁸⁶ Here, the idea is that the descent from the One must reach its logical end when, in the words of one scholar, it becomes the “absolute otherness from the Good, where there can be no longer any unity, goodness or reality at all.”⁸⁷ At other times, Plotinus discusses an intelligible matter that exists in the realm of Ideas.⁸⁸ For Christian Platonists like Augustine, matter could not be inherently evil since it was created by God, but it could be inherently inferior. Its

85. *Enneads*, I.8.8.18–20. 86. *Ibid.*, II.4.16.3.

87. For an account of matter in Plotinus, see Armstrong, “Plotinus,” esp. 256–58, and Denis O’Brien, “Plotinus on Matter and Evil.”

88. See *Enneads* II.4.4–5.

mutability and divisibility placed it at the lowest stratum of being. In other words, for many Platonists, the exact relationship between matter as receptacle, matter as negativity, and matter as Idea is not clearly worked out. As we will see in chapter 7, this same lack of clarity infects Leibniz's early views about matter.

For most Platonists, it followed from the Supreme Being Assumption that there were grades of reality and perfection. Two important metaphysical doctrines were thought to be closely related to this commitment to a hierarchy of being. First, many believed that the human soul had a special status in the ontological hierarchy because it was as perfect an unity as anything other than God could be, despite the obvious fact that it was tied to and rooted in the material world. For Plotinus, the soul was self-perfectible and naturally immortal; for Augustine, it was perfectible with God's grace and immortal with God's will. According to Augustine, although the soul is the closest of all creatures to God, it is not divine in that it shares the essential instability and mutability of all created things.⁸⁹ Second, many philosophers believed that something lower in the hierarchy of being could not act on something higher. From this claim, it was supposed to follow that something lower in the hierarchy could neither create nor destroy something higher.

Such tenets about activity, production, and destruction gave rise to a number of related difficulties, several of which are relevant to Leibniz. Because matter was believed to be on the lowest metaphysical rung and to have no power whatsoever, a question arose about how the body could act on the soul. Plotinus, Augustine, and others fretted about exactly how, in Plotinus' words, "the soul comes to be in a body."⁹⁰ Moreover, because something with less perfection could not produce something with more perfection, it was unclear what to do about the creation of human souls. A debate raged among Christian theists about whether or not human souls could arise from other human beings (say, human parents) or had to be produced directly by God. The debate was complicated both by the doctrine of original sin, according to which all human beings are supposed to inherit the sinfulness of their first parents, and by the Biblical creation story, according to which everything was supposed to have been created "in the beginning." For some theologians, it was obvious that only the Supreme Being could create souls, and that it did so at the creation of the world. Among the theories that arose to explain how this was supposed to work, one of the most important was that of traduction. As Goclenius defines the problem in his *Lexicon Philosophicum*, traductionism arose as a solution to the problem of whether or not the justice of God could be passed down to successive generations through "carnal generation."⁹¹ Although traductionism as a doctrine was supposed to solve a number of related problems, the core assumption was that all human souls were present in Adam and were passed down and distributed

89. *De Beata Vita* I.4; *De Generatione* X 24.40. 90. *Enneads*, IV.3.1.17.

91. Goclenius, *Lexicon Philosophicum*, 1136.

through generations. The idea seems to be that they remain dormant until the appropriate time to be actualized.⁹²

A very closely related problem arose from the conflict between the story of creation in Genesis, according to which God created everything, and the apparently obvious fact that some natural objects produce others. In some of his writings, Augustine offered a solution to the problem according to which God did create everything in the beginning but allowed some of his creatures to remain latent, in a state of potentiality. Such things exist in a state of “potentiality” until it is appropriate for them to make their appearance. Augustine uses the analogy of a seed, and says that these things exist as *rationes seminales* or *rationes causales*: these “seminal *rationes*” have a germinal existence until it is time for them to develop into fully actualized creatures. In this sense, they contain the principles of their subsequent development and merely have to wait for the right time to grow.⁹³ In his work *On the Trinity*, Augustine explains that God:

governs creatures from within and from the summit of the whole causal nexus. . . . For all things were created at the beginning, being woven primordially into the texture of the world; however, they await the proper opportunity for their appearance. Just as mothers heavy with their offspring, the world is heavy with the causes [rationes] of things still to be; and they are created in the world by no one except that Supreme Being in whom there is not birth and no death, no beginning and no end.⁹⁴

I will not attempt to explain Augustine’s position. What is important for our purposes is to see that the notion of “seminal *rationes*” gave Augustine a way of conceiving the causal efficacy of created things and the temporal unfolding of events, while at the same time safeguarding God’s role as creator of everything.

Let’s summarize some of these points in the following way:

- The *Doctrine of the Hierarchy of Being* maintains that matter, which is the lowest stratum of created being, lacks all power and causal efficacy, while human souls, which constitute the highest stratum of created being other than angels, can only be created and destroyed by God.
- The *Causal Seed Doctrine* asserts that God created everything in the beginning as seminal *rationes* which remain dormant until the appropriate time for them to become causally efficacious.

8. Platonism in Leipzig

In chapter 1, section 2, I presented the methodological proposals of the two most prominent professors at Leipzig in the middle of the seventeenth century, Johann Adam Scherzer and Jakob Thomasius. In this chapter, I have

92. As we will see, Leibniz was interested in the doctrine of traduction. See VI ii 144.

93. *On the Trinity*, III viii (13); *De Generatione* VI, passim.

94. *On the Trinity*, III ix (16).

articulated several Platonist assumptions in an attempt to capture the core features of the Platonism that Leibniz imbibed as a student. It is now time to look briefly at the writings of Scherzer and Thomasius with an eye to their Platonism. That these prominent professors in Leipzig were thoroughly acquainted with that philosophical tradition is clear.⁹⁵ Their texts contain, with varying degrees of completeness, all of the Platonist assumptions articulated above.

In the textbooks by Scherzer, we find a thorough discussion of kabbalism, Renaissance Platonism, and the *prisca theologia*.⁹⁶ He refers to Plato, Plotinus, Philo, Proclus, Augustine, and Johann Reuchlin, documents the heresies and religious chaos of his age, and asks how “will the bare truth ever be revealed?” His answer is that we will find the truth in “the words of the scripture . . . properly understood.”⁹⁷ In his *Vade Mecum*, Scherzer makes several points that are especially relevant to our present discussion. He says that he is following Plato in the second book of the *Republic* when he defines God as what “remains simple” while being “most beautiful . . . and most good.” Embracing the causal doctrine of emanation, Scherzer claims that the Supreme Being is the principle of all things and their constant source: “in acting . . . [God] is neither changed nor depleted” and yet “is that through which things live.” He claims to follow Ficino and others by conceiving of God as “the light itself . . . , the reason of reasons, the fount and maker of all things, the uniform and omniform form . . . , the unity in the multitude.” According to Scherzer, the Supreme Being contains all things while remaining fundamentally simple, and acts constantly to conserve creatures, while “nothing in him is changed, nor is it depleted.”⁹⁸ Scherzer distinguishes between the archetypal world and the created world, where the former is the Idea of all possible things as they exist in the mind of God and the latter is the coordinated aggregate of created things. The conception of the divine and its relation to the created world is clear. The mind of God contains the Platonist Ideas or archetypes; the creatures of the world are manifestations of these Ideas. The former are perfect, and the lat-

95. For the spring semester of 1663, Leibniz visited the University of Jena, where he studied with Erhard Weigel, whose works are also a mixture of Platonism, Aristotelianism, and other philosophies. Unlike the Platonist ideas of Thomasius and Scherzer, the Platonism of Weigel has been noted. See Moll, *Der junge Leibniz*, Vol. I; and Leinsle, *Reformversuche*, 20–26. In ch. 3, sect. 1, I argued that Weigel is a reformed philosopher. As a philosopher who endorses many Aristotelian doctrines, he nonetheless accepts a fundamentally Platonist account of God and the relation between God and creatures. Weigel also embraces the general features of the metaphysical and epistemological doctrines articulated in sects. 2–7. In his *Analysis*, Weigel agrees that the Supreme Being emanates its attributes continually into creatures (109, 173) and acknowledges that these attributes are like Platonist Ideas (182), which can be glimpsed by “our intellect” with the aid of “the divine light” (109). Weigel is especially articulate on some of the the epistemological points discussed in sect. 6.

96. Scherzer’s methodological and philosophical views are more complicated than indicated here. For more on Scherzer, see my “Humanist Platonism in Seventeenth-Century Germany.”

97. Scherzer, *Collegii anti-Sociniani*, Praefatio. 98. Scherzer, *Vade Mecum*, 52–53.

ter are not; yet the perfection of God is evident in the composition and harmony of created things.⁹⁹

Leibniz's mentor, Jakob Thomasius, was also thoroughly conversant with the details of Platonism. Despite his very definite Aristotelian leanings, Thomasius had an impressive grasp of the other great ancient systems. For example, his *Exercitatio* is an extended comparison of the philosophies of the Stoics, the Aristotelians, and the Platonists on a long list of philosophical and theological topics.¹⁰⁰ In this text, Thomasius refers to the whole range of pagan and Christian Platonist philosophers. One of his general conclusions is that Platonism is on the whole much less heretical than Stoicism, although he insists that all ancient pagan philosophers must be approached with caution. He agrees with Scherzer that God, who is thoroughly perfect and simple, is the source of all things.¹⁰¹ Thomasius claims that the Supreme Being is "the fountain of features which flow into creatures," and he is happy to accept Augustine's conclusion that "God contains all things in himself;" but he insists that this flowing or emanation be understood in the right way. For Thomasius, it is enormously important to understand that the flowing is controlled by God's will and that the divine is properly transcendent.¹⁰² In short, Thomasius accepts the general features of the account of God and the relation between God and creatures offered by Scherzer, although he often goes into many more details than the latter does.

Thomasius' *Exercitatio* is an important work for our purposes. As an extended comparison between the philosophies of the Stoics, the Aristotelians, Epicureans, and the Platonists, it covers all the Platonist doctrines articulated in the last section, and more. Four features of this long and elaborate text are of special interest to us. First, it proposes an epistemology like the one described in section 6. According to Thomasius, it is the faculty of understanding (*intellegentia*) that grasps the forms or Ideas which, due to their eternity and incorruptibility, are the only objects of knowledge. Second, Thomasius is concerned with the grave problems that cluster around the concept of matter. He discusses at length each of the issues and worries articulated in section 7. For example, at one place in the text, Thomasius ponders the question of whether or not "matter is the principle of bad."¹⁰³ In another, he asks how "the germ of matter" could be in God? In this discussion, he places matter with its fundamentally divisible nature at one ontological extreme and the Supreme Being with its thoroughly simple nature at the other. Given the divisibility of matter, Thomasius wonders whether or not there can be anything "positive" about it. He explains that some philosophers have

99. Scherzer, *Vade Mecum*, 137.

100. We tend to think of Thomasius as an Aristotelian because that is how Leibniz described his illustrious teacher. E.g., at VI ii 426, Leibniz claims that Thomasius is the "most celebrated German Peripatetic." But Thomasius was much more than that. He wrote a number of books explicating and then comparing ancient philosophies. He was obviously well-versed in Stoicism, Platonism, and other ancient ideas. Although he tends to agree with Aristotle, he takes Platonism very seriously and knows its history very well.

101. Thomasius, *Exercitatio*, 189-90, 192. 102. *Ibid.*, 249-53. 103. *Ibid.*, 162.

maintained that what is corporeal cannot come from what is incorporeal,¹⁰⁴ while others have claimed that the Idea of matter was “one before everything came to be.”¹⁰⁵ Thomasius goes on to present an elaborate solution to the problem of how matter can be understood to come from God. Drawing on Plato, Proclus, and the Italian Renaissance humanist, Francesco Piccolomini (1523–1607), he offers a fascinating variation on the Platonist theme of an hierarchy of dependence.

This brings us to the other two features of the *Exercitatio* that are specially relevant to the young Leibniz. Thomasius is very concerned to explain exactly how God is related to creatures and how creatures are related to one another and to God. In his discussion of these difficult topics, he is keen to turn the Stoic notion of a World Soul, which he considers heretical, into something both theologically orthodox and metaphysically useful. Concerning the relation among creatures and their relation to God, Thomasius cites a number of authors who claim that the “essence of God permeates” the world so that there is an “effusion of vital spirit.” He points out that some philosophers have wanted to identify “the Agent Intellect of Aristotle with the Platonist Soul of the World” and have claimed that “the Agent Intellect participates in divinity.” Thomasius agrees with the basic assumptions here that the World Soul permeates all creatures and connects them all together, and moreover that there is a close relation among creatures in that they all exist within “the living spirit” and “light of God.” He suggests that due to the close interconnection among minds, each mind assists the others in its ascension toward God.¹⁰⁶ That Thomasius accepts a version of the Principle of Harmonized Plenitude and the Enhancement Relation is clear.

But Thomasius also insists that such claims smack of heresy and incoherence unless we clarify the notion of a World Soul. Thomasius agrees with philosophers like Scotus Erigenus who claims that “everything is God and God is everything,” but he demands that we understand exactly the relation between God and nature. According to Thomasius, it is important to grasp that everything “is wholly part of the divine” and yet that God is not in nature. Citing Plotinus, Proclus, and other Platonists, Thomasius offers the following account of the relation between God and creatures:

Things are in God as in a fount and first cause, i.e., most eminently; secondly, they are in Mind as Ideas and form; thirdly, they are in Soul as *rationes* placed in its essence; fourthly, they are in Nature as seeds. For nature is the seminal power effused in universal matter by the soul of the World. Fifth, they are in Matter, although as a shadow, through imitation and participation.¹⁰⁷

The details of this account are both fascinating and difficult. What is particularly worth our attention is the fact that the hierarchy here is such that what is more complicated and divisible is supposed to depend on and be explained by what is more simple and unified. Thomasius writes: “As Mind

104. *Ibid.*, 188–90. See also 191–92. 105. *Ibid.*, 207–08.

106. *Ibid.*, 215–17. 107. *Ibid.*, 188.

depends on God, [and] Soul on Mind, so Nature depends on Soul.”¹⁰⁸ It is important to grasp the exact nature of this dependence relation. Thomasius says that the higher stratum is the principle of the lower and contains “eminently” what the lower stratum “participates in” or has “formally.” In his *Lexicon Philosophicum*, Goclenius offers some help. As he explains, God contains all things eminently in the sense that the divinity contains them “above every limit and above every grade.” According to Goclenius, the “opposite” of this is to have those things “in a certain way [modus] and with a limit.”¹⁰⁹ Thomasius summarizes his point: “As mind receives Ideas from God, Soul receives *rationes* from mind; so nature receives seeds from soul.”¹¹⁰ The dependence relation is very similar to the one described in section 4 between the strata in the Plotinian hierarchy: each level in the hierarchy has eminently what the next lower stratum has in a less unified and less perfect way. We called this relation one of “nonreciprocal dependence” where the basic idea was that the higher stratum remains transcendent while also being immanent in the lower. In the same way that the Plotinian One contains the being of all the Ideas without distinction, so does Thomasius’ God; in the same way that the Plotinian realm of Ideas contains that being but with distinctions among it, so does Thomasius’ Mind. According to Thomasius, Mind contains the Ideas which are “mental modes” of God and “the exemplars and archetypes” of things.¹¹¹

So far, so good. But what exactly is “the World Soul”? In keeping with the relation of nonreciprocal dependence, the *rationes* of the World Soul must contain the being of the Ideas though in a less perfect and less unified way. In other words, the Ideas must be transcendent from and yet immanent in the *rationes* in the World Soul. An obvious way of making sense of this is to suppose that the *rationes* are the complex essences or blueprints for the individuals in the created world. They are complex instantiations of the Ideas. In this case, the World Soul is the collection of such essences or blueprints; it is the fully articulated blueprint for the actual world. This interpretation of the World Soul successfully explains how it “depends on” Mind and how the *rationes* contain formally what the Ideas contained eminently. Moreover, this interpretation helps to explain Thomasius’ account of nature. As Thomasius puts it, nature is “the power [virtutem] of the seeds infused into Matter by the World Soul.”¹¹² The World Soul is God’s plan for the actual world; nature is the instantiation of that plan in matter. Thomasius claims that there are great benefits to this account of the World Soul. In particular, he thinks that it helps to make sense of the relation between the Ideas of God and the world, in that it successfully explains how created things can be said to come from the Supreme Being and yet be distinct from it. This account also avoids the problems that the theory of the

108. Thomasius, *Exercitatio*, 188

109. Goclenius, *Lexicon Philosophicum*, 146. The history of the substance-mode relation has not been thoroughly studied. For a sketch of that history, see my “Leibniz and Spinoza on Substance and Mode,” sect. 3.

110. Thomasius, *Exercitatio*, 190. 111. *Ibid.*, 191. 112. *Ibid.*, 190.

Stoics faces because, unlike that theory, this account does not conflate God and the World Soul. Rather, it makes it clear that the Ideas are not in matter, although the seminal powers are.¹¹³

In fact, Thomasius' proposals may not be quite as helpful as he thinks: they require a more thorough explication before their success in explaining the relation between God and the world may be properly evaluated. I will offer neither an explication nor an evaluation here. But I would like to emphasize the fact that Leibniz's favorite professor presents in elaborate detail a Metaphysics of Divinity that goes well beyond anything proposed by the standard Aristotelian-scholastic account. Thomasius' thorough familiarity with the complicated details of Stoicism, Aristotelianism, and Platonism is impressive. With Thomasius as his mentor, there can be little doubt that the energetic and precocious Leibniz would have become entirely conversant in these details. Nor did Leibniz's early exposure to Platonism end with his university studies. Most of his favorite authors during the 1660s were those who wrote extensively on the "the divine Plato."¹¹⁴ While it is true that during the late 1660s Leibniz was interested in formulating his Metaphysics of Substance, he was also keen to develop the details of his Metaphysics of Divinity.

In chapters 2, 3, and 4, I focused on the role that the Aristotelian philosophy played as a source of ideas for the young Leibniz. In this chapter, I have outlined the background to Leibniz's Metaphysics of Divinity. Once the texts of 1668–71 are seen in the light of Leibniz's early Platonism, it is relatively easy both to discern many of the core elements of his mature philosophy and to identify many of the motivations behind these views. That Leibniz's early Platonism is very much over-determined is clear. The next three chapters offer abundant evidence of the important use to which the young Leibniz put these assumptions. Not only did he absorb the main features of this metaphysics, he expanded upon the views that he inherited in important ways. While Leibniz made this ancient tradition his own, there can be no doubt of his intellectual debt. As Paul Oskar Kristeller has written:

ever since classical antiquity, Platonist philosophers have tried not so much to repeat or restate Plato's doctrines in their original form, as to combine them with notions of diverse origin, and these accretions, like the tributaries of a broadening river, became integral parts of the continuing tradition.¹¹⁵

In a way that has not been fully explored, Leibniz's metaphysics is such a tributary.

113. *Ibid.*, 190–91.

114. For example, Leibniz refers to the works of Athanasius Kircher and Johann Heinrich Alsted, both of whom he considers "most learned" and both of whom make thorough use of Platonist ideas. See, e.g., VI ii 416, 420; VI i 74, 278. For a brief account of Kircher and Alsted, see ch. 1, sect. 3.

115. Kristeller, *Eight Philosophers of the Italian Renaissance*, 48–49.

Metaphysics of Divinity, 1668–early 1671

In the final days of 1670, Leibniz wrote a letter to Jakob Thomasius in which he discusses the philosophy of Plato, the nature of mind, and the importance of final causes. In the letter, the young man compares his illustrious teacher to Plato and displays some of his own most basic beliefs about the place of mind in nature. Leibniz proclaims that Thomasius and Plato share a goal and method. In the same grand way that Plato helped his contemporaries escape “from the shadows” of materialism by introducing them to final causes, so Thomasius has encouraged his contemporaries to avoid the dangers of that false philosophy by reminding them of the importance of such causes in physics. As Leibniz sees it, Plato had the courage to reject the views of his materialist predecessors and to turn instead to the “truly rational *rationes* of things, that is, the ends.” Where Democritus and some of his contemporaries mistakenly made matter the *ratio* of things, Plato correctly saw that there were “two principles, mind and matter.” Similarly, because Leibniz’s contemporaries rely too heavily on geometry “which lacks any reference to a final cause [causae finalis]” and because in general “the *ratio* of the recent physics . . . [is] the material causes [caussas materiales] of things,” Thomasius struggles to return philosophy to its proper objects.¹ Leibniz encourages his teacher to follow Plato’s lead and prove the usefulness of mind to philosophy in general and to physics in particular.

There is little doubt that Leibniz is sincere in his approbation of Thomasius. But by December 1670, the student has gone beyond the proposals of his teacher. From Thomasius, Leibniz had inherited a conception of the created world as an elaborately interconnected and divinely harmonized whole. For example, in his *Physica*, Thomasius insists that we must attend to the interrelations among created things and witness among them “the harmony and beauty of ends.” He writes: “there is the most elegant nexus among things and the finest order.”² From his teacher, Leibniz had learned that the Supreme Being is immanent in the world in the sense that the *rationes* of the World Soul are instantiated in something like seminal powers.³ When Leibniz insists in the December 1670 letter to Thomasius, that philosophers must reclaim minds and final causes, he is prepared to exceed the pronouncements of his teacher in significant ways. By the final month of 1670, Leibniz is willing to reduce everything to the activity of mind-like sub-

1. II i 73. 2. Thomasius, *Physica*, Praefatio.

3. I discussed some of Thomasius’ views in ch. 5, sect. 8.

stances whose behavior has been harmoniously arranged by God. As he explains to Thomasius, the thinking of individual or “secondary” minds “comes from the first mind, i.e., from God,” who “in his wisdom, has arranged things from the beginning” so that “all things follow as if by a certain necessity toward the greatest harmony of all things.” Leibniz explains that because of his discovery about the relation between primary and secondary minds, “I came to think of motion as the sole universal [thing] on earth, from which a *ratio* can be given for all the phenomena which we perceive as many and marvelous in their appearances.”⁴

Leibniz surpasses Thomasius’ proposals in three critical ways. Where Thomasius made seminal powers the source of activity, Leibniz assigns created minds this task. Where the teacher struggled to explain the place of matter in God’s world, the student rids creation of brute passive stuff. Where the elder preached that human beings could climb the epistemological ladder from seminal reasons and then World Soul to Ideas and then God, the younger demands that we turn our backs on the sensory world to find God. That is, Leibniz intends to retrieve a Platonist epistemology according to which the only objects of genuine knowledge are internal and immutable. For Leibniz in December 1670, there are two distinct aspects to nature and being. To understand the sensory world or world of becoming, we must attend to the phenomena and to motion: it is motion by means of which “the *ratio* of all phenomena . . . can be given.” To understand the world of Ideas, we must first attend to the underlying harmony of things and then to the divine source of that harmony. According to Leibniz, because things were so “arranged from the beginning” by primary mind, it is possible to discern harmony within creation and then to seek the eternal Ideas within the world and within our souls.⁵ When Leibniz proclaims the virtues of Plato’s philosophy to Thomasius at the end of 1670, he is entirely in earnest.

During the months between the publication of the Nizolio edition in early 1670 and the end of 1671, Leibniz was enormously productive. He managed to construct the core features of his mature philosophy. What he did during these months was to take the various presuppositions that he had either inherited from his teachers or devised himself and apply them to a whole range of pressing philosophical and theological problems. That is, in 1670, Leibniz was equipped with the following philosophical presuppositions: the Aristotelian assumptions uncovered in chapter 2, the Second Theory of Corporeal Substance presented in chapter 4, and the Platonist assumptions articulated in chapter 5. The philosophical topics that occupied him were nothing less than the problems of causation, knowledge, goodness, and being, while the dominant theological problems were the incarnation of Christ, the resurrection of the body, and the mystery of the Eucharist. As I

4. II i 73–74.

5. II i 74. See Leibniz’s *New essays on human understanding* of 1704–05 where he makes very similar comments about the usefulness and importance of Plato’s philosophy. See VI vi 71–73. The extent to which Thomasius endorses the claims listed here is unclear.

will show, the core features of Leibniz's metaphysics developed out of an attempt to solve exactly these problems by precisely those means. If I am right in my analysis of the texts of 1670–71, then the central doctrines of Leibniz's philosophy resulted from the melding of his *Metaphysics of Divinity and Substance* and were in place by late 1671, several years earlier than previously thought.⁶

A preview of things to come may be helpful. In this chapter, I make a general survey of the early writings and discuss some of the most important lessons that Leibniz learned from his Platonist predecessors. On the basis of an analysis of the texts of 1668–early 1671, I show (1) that Leibniz's original conception of harmony is a combination of Emanative and Reflective Harmony, where the Supreme Being emanates its essence to creatures, some of which are in Reflective Harmony with one another, (2) that the Platonist tradition bequeathed to Leibniz a set of related assumptions about the activity, unity, and divinity of minds, (3) that underlying Leibniz's notion of created substance is the view that for every substance, there is a complete concept in God's mind and an ontological correlate in the substance, and finally (4) that Leibniz's epistemology is Platonist in the sense that the only proper objects of knowledge are the Ideas which are grasped by the intellect and which are non-sensory. In chapter 7, I argue that when Leibniz wrote the December 1670 letter to Thomasius, he had decided to reject the reality of extended (primary) matter and to construct the passive principle in corporeal substance out of mind-like substances. He remains committed to the general structure of his Second Theory of Corporeal Substance, although he radically transforms its passive principle. That is, I maintain that by the winter of 1670–71, Leibniz has accepted a version of panorganism according to which corporeal substances are constituted of a mind-like substantial form and passive principle, where the latter is a collection of corporeal substances, each of which is itself a substantial form and collection of substances. There is no passive extended matter anywhere in the created world, but there is passivity. In chapters 8 and 9, I argue that soon after developing this mind-like theory of substance, Leibniz hit upon Preestablished Harmony as an elegant means to explain the interrelations among the created substances of the world.

1. Universal harmony

Early in the 1660s, Leibniz explains that “metaphysics knows the end of all disciplines, or rather of all things. Its nature is to treat of God, . . . the ultimate end of all things.”⁷ It is now time to turn our attention to the role of

6. In fact, I argue in “*Metaphysics: The Early Period to the Discourse on Metaphysics*” that Leibniz did not develop the Preestablished Harmony until 1676. See sect. 3, esp. 93–107. It was my recognition of Leibniz's Platonism that led to a thorough reevaluation of some of the early texts and a recalibration of the main parts of Leibniz's development.

7. VI i 32.

the Supreme Being in Leibniz's original metaphysics. Since the notion of God as the emanative cause of the created world stands at the very center of Leibniz's *Metaphysics of Divinity*, let's begin there.

For decades, scholars have considered Leibniz's conception of universal harmony to be one of the most central features of his thought. Recent commentators have been concerned to show that from an early point in his career, Leibniz conceived the world to be harmonious, where harmony is to be understood in terms of unity and multiplicity, each of which is conceived as a good-making criterion. There has been a lot of speculation about the motivation behind Leibniz's conception of harmony and about how to understand the relation between its demand for multiplicity, diversity, or variety on the one hand and identity, simplicity, or unity on the other. Not unreasonably, some commentators have argued that these criteria are at tension with one another; others have worked rather hard to show that they are not.⁸ In this section, I will argue that once we place Leibniz's original comments about harmony in their rightful Platonist light, it becomes clear that these good-making criteria are much more closely related than has previously been recognized.

As I will argue here, universal harmony has two constituents, each of which follows directly from the Platonist assumptions articulated in chapter 5. The first of these, what I call *Emanative Harmony*, follows from the assumption that God creates and maintains the world through emanation, and therefore that every creature is an instantiation of the divine essence. The second of these, what I call *Reflective Harmony*, is a version of the Platonist Theory of Reflective Harmony articulated in chapter 5, section 5. I will consider each of these in turn.

Emanative harmony

The Platonist conception of the Supreme Being as the emanative source of the created world entails that God be both the unity and multiplicity in the world. As the idea was explained in section 4 of chapter 5, the Supreme Being is the multiplicity in the world in the sense that the variety of creatures is merely the divine essence diversely manifested, that is, the Supreme Being emanates its essence in a variety of ways and thereby produces multiplicity within the world. As we saw in that discussion, the Supreme Being is the unity in the world in two senses: first, its unity emanates to each of its products and thereby produces a unified and real thing; second, its unity emanates to their totality and thereby produces an interrelated whole. In section 4 of chapter 5, we also noted that the divine essence was often iden-

8. In their recent discussions, scholars have focused on those texts by Leibniz in which the good-making criteria are described as simplicity or identity and diversity or variety. For my discussion here, there is no significant difference between this terminology and that of unity and multiplicity. See esp. Nicholas Rescher, *Leibniz's Metaphysics of Nature*, 11; Rutherford, *Rational Order*, 13–14; David Blumenfeld, "Perfection and Happiness in the Best Possible World." For citations to other literature on the topic, see Rutherford and Blumenfeld.

tified with the divine attributes, and that the common belief was that every created thing contained all of those attributes. In order to make the Theory of Emanative Harmony properly orthodox and to avoid claims of pantheism, it was of crucial importance for Augustine and other Christian Platonists to insist that the divine attributes of creatures be utterly inferior to those of the creator. As the Creaturely Inferiority Complex insists, every product of the Supreme Being contains all the attributes that constitute the divine essence, though the product instantiates each of those attributes in a manner inferior to the way in which they exist in God.

In the texts written between 1663 and 1668, there is neither serious discussion of the relation between God and creatures nor extensive use of the Platonist metaphysics articulated in chapter 5. Leibniz's primary interest during the mid-1660s was the wholesale restructuring of legal practice although, as noted in chapter 2, he was also concerned to erect his own mechanical physics. Leibniz mentions the divine Ideas in passing in his *Metaphysical Disputation on the Principle of Individuation* of 1663, refers frequently to a variety of Platonists during the period, takes notes on Platonist texts, but makes minimal use of Platonist doctrines. We need not jump to conclusions however: the young man had not shed the Platonism of his teachers. In the well-known *Dissertation on the Combinatorial Art* of 1666, Leibniz briefly turns to the topic of the relation between God and creatures in a way that discloses his dormant Platonism. After the title page of the published text, Leibniz presents some "corollaries" that are supposed to follow from this combinatory art and that fall into four categories: logic, metaphysics, physics, and practical. One of the metaphysical corollaries is: "God is substance; creature is accident."⁹ Throughout the 1660s, Leibniz uses the Latin term (*accidens*) in a fairly standard scholastic way: an accident is a non-essential property that can be said "to flow" from the essence of the thing of which it is a property. Micraelius, for example, writes in his *Lexicon Philosophicum* that an accidental property "flows from the essential principles" although it is not "part of the essential constituents."¹⁰ Leibniz's use of this term in describing the relation between God and creatures is important. It implies that creatures both flow from God's nature and reflect that nature, but do not do so necessarily. The text indicates that Leibniz had accepted the Platonist conception of God promulgated by his teachers but had no reason to use it during the time he was working on physical and legal topics. He soon would, however. When Leibniz begins his serious study of theological issues in 1668, his Platonism makes its grand entrance. In the *Catholic demonstrations*, Leibniz turns his attention to topics that require a precise analysis of the causal relation between

9. VI i 229: L 75.

10. Micraelius, *Lexicon*, 17. Scherzer defines accidental emanation as what follows "naturally from a subject as a result of its properties or models." *Vade Mecum*, 67. For a brief account of the scholastic notion, see Jorge E. Gracia, *Introduction to the Problem of Individuation in the Early Middle Ages*, 176. For some of Leibniz's uses, see VI i 13-16, 91, 483, 503.

creatures and God. In developing his views on this topic, Leibniz turns to the Platonist model. It is in this context that Leibniz begins to construct his Metaphysics of Divinity, and first articulates the notion of harmony at its core.

Prior to 1667, the only references to harmony that we find in Leibniz's papers appear either in legal and logical contexts (and have nothing to do with metaphysics) or in the notes Leibniz took on Johann H. Bisterfeld's book.¹¹ In a lengthy legal work written in 1667, Leibniz asserts that there is "an elegance and harmony in the world that coincides with the divine will,"¹² but he does not develop this idea. In his essay *On transubstantiation*, Leibniz presents for the very first time some of the details of his Metaphysics of Divinity. Concerning the general relation between God and creatures, he proclaims his account to be similar to "Plato in the *Timaeus* about the world soul," to "Aristotle in the *Metaphysics* and *Physics* about the agent Intellect," to the Stoics and others. Like these other philosophers, he maintains that God is "diffused through everything."¹³ In section 3, I will describe exactly how this diffusion comes to be. In brief, the Supreme Being chooses among "the infinitely really diverse Ideas" in its mind to create some so that "[t]he substance of each [non-human] thing is not so much mind as it is an Idea of a concurring mind."¹⁴ For each non-human substance, there is a corresponding Idea that functions as the substantial form of the substance. We will return to the complicated role of these Ideas in section 3, where I argue that each Idea is also a complete concept. What is important now is to understand exactly how God diffuses things.

According to Leibniz in *On transubstantiation*, each Idea is *in* God and in creature. In a marginal note he writes:

The unions of Mind and Body are Ideas, as angles are the unions of points with lines. Ideas are the same thing as the Substantial forms of things. Ideas are in God as an

11. For the former, see VI i 184, 212, 360; for the latter, VI i 153, 158. Rutherford has said that Leibniz was "greatly impressed" by Bisterfeld's conception of harmony, and has used Bisterfeld's account as "a starting point" for an interpretation of Leibniz's conception. See *Rational Order*, 36–40. It is highly improbable that Bisterfeld was even a minor source for Leibniz's own conception of harmony. There is no doubt that Leibniz thought well of Bisterfeld's book and that some of his own ideas are quite like those of the Herborn philosopher. But there is very little reason to believe that Bisterfeld was more important than Scherzer or especially Thomasius in this regard. Leibniz hardly ever refers to either Bisterfeld or his book after 1671 and he never includes Bisterfeld on any of his lists of philosophers who influenced him on these matters. For an interesting discussion of the relation between Bisterfeld and Leibniz on the topic of harmony, see Maria Rosa Antognazza, "*Immeatio* and *Empertiochoresis*: The Theological Roots of Harmony in Bisterfeld and Leibniz."
12. VI i 344.
13. Although part of the remainder of this provocative text is illegible, the gist of Leibniz's proposals seem clear. The relevant text in the Academy edition reads as follows (with the illegible parts in the text marked with dots by the editors): Ipse Plato in *Timeo* animam mundi, Aristoteles in *Metaphysicis* et *Physicis* Intellectum agentem per omnia diffusum, Stoici Substantiam Mundi Deum statuentes, Averroes Aristotelis Intellectum . . . propagans, Fracastorius et Fernelius Originem formarum . . . in hoc consentiunt omnes: Substantiam, naturam, principium. . . . See VI i 510.
14. VI i 511–12: L 118.

action is in an agent, as Creation is in God. If someone should ask: Is an Idea a created thing or not? It should be responded: Is a creature a created thing or not?¹⁵

Leibniz has constructed the Idea to suit perfectly the ontological demands of Emanative Harmony. In section 4 of chapter 5, I explained that when the products of the Supreme Being are said to exist in their transcendent source, the point is that the whole being and nature of each product depends on that source. It is in this sense that each Idea is in God: it depends entirely on God for its being and nature. In the *Confession of nature against the atheists* Leibniz defines an action of substance as a variation of essence. In *On transubstantiation*, each Idea is a variation of the essence of God, and in that sense “flows” from the divine nature. The Idea depends entirely on God who is its transcendent source. But the Idea is also a product of God and therefore, insofar as the Idea is in the creature, so is God. In section 4 of chapter 5, we discussed the claim that the Supreme Being is said to exist in its products. As the Creaturely Inferiority Complex summarizes the point, every product of the Supreme Being contains all the attributes that constitute the divine essence though the product instantiates each of those attributes in a manner inferior to the way in which they exist in the Supreme Being. The Supreme Being is in its creatures in the sense that its Ideas are: each Idea is merely a variation of the emanated essence of God. In this sense, the relation between God and creatures in *On transubstantiation* conforms to the interpretation offered above of the “metaphysical corollary” in Leibniz’s early *Dissertation on the the Combinatorial Art*: each creature flows from God’s nature, where the assumption is that the divine essence is diffused through every created thing in the world. But even at this early stage, Leibniz is careful to insist that the Supreme Being choose which Ideas to create and that it do so among an infinite number of possibilities. Finally, it is noteworthy that Leibniz’s position bears an affinity to that of Thomasius as described in section 8 of chapter 5. For both Leibniz and his teacher, God is immanent in creatures and distinct from them so that their diversity (or variety) is the divine essence variously manifested and their unity (or identity) follows from the fact that they are all acts or emanations of the same thing. For Leibniz, as for his revered teacher, the Supreme Being is both transcendent from and immanent in all its products. As Thomasius made the point, God is distinct from nature and yet “God is everything and everything is God.”¹⁶

Besides *On transubstantiation*, the most important text from the *Catholic demonstrations* that treats harmony is the *Conspectus*, a work briefly examined in chapter 2. As noted there, it is an outline of Leibniz’s *Catholic demonstrations*, which includes a stunning array of theological and philo-

15. VI i 510. This marginal note might have been written later than the text itself.

16. *Exercitatio* 206. For a discussion of this point, see ch. 5, sect. 8. We find the same metaphysical commitment in Anne Conway who insists in her *Principles of the Most Ancient and Modern Philosophy* that God is present in all created things and “immediately fills” all things. See Book V, sect. 4.

sophical topics. At the end of the third part of this outline, Leibniz turns to the possibility of the beatific vision. He writes: “the beatific vision or [seu] the intuition of God, face to face, is the contemplation of the universal Harmony of things because GOD or [seu] the Mind of the Universe is nothing other than the harmony of things, or [seu] the principle of beauty in them.”¹⁷ We need to proceed carefully. Since the whole point of the *Catholic demonstrations* is to avoid heresy and promote religious concord, we should not read this passage as a heretical harangue. Leibniz is here discussing the topic of beatific vision and how it is that human beings might come “face to face” with God. According to Leibniz, the goal of human life is the recognition of harmony, where that is the same thing as the intuition of God: when we “contemplate the universal Harmony of things,” we are face to face with the Divine. According to Plotinus, the beatific vision is something like an intuition of how all things are one. According to Thomasiaus, the final stage in the ascent to God is the recognition of the divine Ideas that are contained in the universal “Mind.” In the *Conspectus*, Leibniz agrees with his Platonist predecessors. The beatific vision will occur when we are able to discern the unity within the multiplicity of the world: “the harmony of things, or the principle of beauty in them” is just God insofar as the Supreme Being is the unity and multiplicity in the world. We will have glimpsed God once we recognize that the divine unity, beauty, and perfection are immanent in everything.

But we need to do some explaining at this point. It is one thing to say that God is discernible as the unity and multiplicity in the world, it is another to equate this with beauty and harmony. The use of such aesthetic criteria is itself noteworthy. What does Leibniz have in mind? As a preface to Leibniz’s views, it will be helpful to remind ourselves that it was standard for Christian philosophers to describe the world that God chose to create as predominantly one of harmony, beauty, and orderliness within variety. Thomasiaus often insists, for example, that God can be recognized in “the harmony and beauty” of the world.¹⁸ As noted in section 3 of chapter 5, for those philosophers who were committed to the view that the Supreme Being was perfection itself, it was necessary to explain how there could be imperfections among the products of such a being. The standard story was that the goodness of the whole was increased by the diversity of being. But there is more to Leibniz’s early emphasis on the relation between beauty and harmony than that. From the late 1660s, Leibniz was concerned with the problem of evil. In this context, the problem of the imperfections in the world is particularly acute. Aquinas’ response to the problem is typical: God “does not prevent corruption, deficiency, and evil from being in things . . . because the supreme beauty [summus decor] would be taken away from things, too, if the order of distinct and unequal things were removed.”¹⁹ Aquinas at-

17. VI i 499. 18. E.g., *Physica*, 5; *Physica, Perpetuo Dialogo*, 5–7.

19. *Summa Contra Gentiles*, III, 71 [1–3]. For a discussion of this point in Aquinas and other medievals, see Lovejoy’s *Great Chain*, ch. 3. I do mean to suggest that Leibniz’s use of aes-

tempted to explain “the diverse grades of goodness” at least partly in terms of beauty and harmony. Leibniz’s early interest in the beauty and harmony of the world also had theological and ethical motivations.

In order to grasp the role of the aesthetic criteria in Leibniz’s earliest comments about harmony, we need to turn to his other major project during the late 1660s. At the same time that he was developing the metaphysical theology of the *Catholic demonstrations*, he was thinking about matters of jurisprudence. In a series of notes written between 1669 and late 1671, he investigates a wide range of theological, metaphysical, and ethical topics. These texts, entitled *Elements of natural law*, treat a number of related topics: human virtue and goodness, divine and human justice, knowledge, wisdom, and universal harmony. We will return to some of these texts in this and the next two chapters. That Leibniz should discuss such heady ethical and metaphysical topics in an essay about jurisprudence should not come as a surprise. In a published work of 1664, he is quite explicit about the fact that “the greatest mysteries” must be considered by the student of jurisprudence because unless such things are known beforehand, one cannot judge properly about the just and unjust. Leibniz proclaims in the preface of this work, entitled *Specimen of Collected Philosophical Questions Concerning Law*, that it is philosophy after all that sits “on the throne of wisdom.”²⁰ The *Elements of natural law* contains brief solutions to some of the grand philosophical questions in an attempt to construct the proper basis for an analysis of legal matters. To this end, Leibniz offers clues to his original conception of Emanative Harmony.

In the *Elements of natural law*, Leibniz describes the dominant feature of God’s world for the first time as universal harmony, which he defines both as “diversity compensated by identity”²¹ and as “identity compensated by diversity.”²² He makes some provocative claims about how he envisages the interrelation between these notions. The basic intuition is that there is a single thing which underlies all the diversity, to which all things are ultimately reducible, and which is discernible. Leibniz writes: “There is greater harmony when there is greater diversity, which nonetheless is reduced to identity. (For there cannot be grades in identity, but in variety).”²³ But he also emphasizes the importance of the fact that the unity within the variety be evident. He explains: “Variety delights but only when it is reduced to a unity,” where the latter is “ordered, connected.”²⁴ About variety, Leibniz proposes that “identical propositions” are not pleasing “because they are obvious and too uniform,” as are “rhythmic verses” which have “the same ending.” The right sort of variety consists in the juxtaposition of the same

esthetic criteria is similarly motivated, but I will not discuss this difficult point here. For a helpful discussion of harmony in Leibniz’s thought that recognizes that aesthetic aspect, see Rutherford, *Rational Order*, ch. 1, esp. 13–18, and ch. 2.

20. VI i 73. 21. VI i 484.

22. VI i 477. There is very little written on Leibniz’s early ethics. For a helpful recent work, see Francesco Piro, “Leibniz and Ethics: The Years 1669–72.”

23. VI i 479. 24. VI i 484.

elements in different ways. For example, to make a pleasing song, Leibniz explains: “It is sufficient for the last part of the [song’s] ending to repeat with a changed beginning.”²⁵ The aesthetic criterion at work here is one where the beauty of an object is a function of how much the elements of the same thing can be made to vary in subtle ways while the unity or singleness of the thing remains evident. The aesthetic criterion applies nicely to the account of the beatific vision in the *Conspectus*: the harmony of the world is a function of the variety of ways in which the essence of God is diffused in the world, while remaining recognizably the same thing. God is like an infinite melody played in infinitely complex ways. As Philo had made the point centuries earlier, God has constructed things so that “our whole system, like a melodious chorus of many men, may sing in concert one well-harmonized melody composed of different sounds well combined.”²⁶

That this melody is recognizably the same, despite the diversity, is crucial to Leibniz’s early proposals in ethics. He agrees with some of his Platonist predecessors that the perfection of God is diffused in the world and therefore that harmony plays an important moral function. According to Leibniz in the *Elements of natural law*, the process of becoming a good person is that of stripping away the chaos and “the confusion of human affairs” and coming to grasp “the infinity” of God. For the good person, “the dissonance” of things will be compensated “through consonance.” Leibniz explains: “But for those who inquire into these things more deeply, the confusion of six thousand years (although not even this lacks its own harmony), when compared to eternity, seems like a single dissonant beat, which when brought into consonance with the whole by the compensation of other dissonances, increases admiration for the ruler, who embraces the infinite.”²⁷ According to Leibniz, “the Good is when harmony is understood thoroughly”²⁸; indeed, “everyone would love everyone, if only we were to look upon, to elevate our eyes to universal harmony.”²⁹ I will discuss some of the complications of this moral epistemology in section 3 of chapter 8. For now, let’s direct our attention to the implied metaphysical lessons: in the *Elements of natural law*, the goal of life is to recognize that everything is an emanation of God and hence that everything is a proper object of love. In a letter to Arnauld of 1671, Leibniz summarizes his position:

I am planning to treat the *Elements of natural law* in a short book. . . . I define a good person . . . as one who loves all people . . . ; harmony as diversity compensated by identity. For variety always delights us, once it is reduced to a unity. . . . I show that it is the same thing to love others and to love God, the seat of universal harmony.³⁰

25. VI i 485.

26. Philo, *On the migration of Abraham*, XVIII 104; Yonge 263.

27. VI i 485. Joseph McAlhany helped with the translation of this Latin text: *sed qui haec altius scrutantur, iis confusio sexies mille annorum (etsi ne haec quidem careat harmonia sua) aeternitati comparata unius pulsus dissoni instar habere videtur, qui alia dissonantia compensante in consonantiam summae redactus auget admirationem infinita complexi gubernatoris.*

28. VI i 478. 29. VI i 481. 30. II i 173–74; L 150.

God is the seat of universal harmony in the sense that the Supreme Being is the transcendent emanative source of the unity and diversity in the created world. Because every created thing is an instantiation of the divine essence, to love creatures and to love God is the same thing.

At this point, a summary is in order. In the late 1660s, Leibniz was working on a number of interrelated projects which required that he articulate for the first time his conception of the relation between God and the world. For a model of that relation, the young man turned to the Platonism of his teachers. Leibniz's original conception of harmony, what I have called Emanative Harmony, develops from that tradition. In the texts of 1670–71, we find a *Metaphysics of Divinity* that contains the Platonist assumptions articulated in chapter 5 (especially section 4) about the Supreme Being and its relation to creatures. According to Leibniz, there is a single, unified, and perfect Supreme Being who *chooses* to emanate its being and perfection into creatures and who nonetheless remains transcendent while all its creatures contain an imperfect instantiation of its essence. Because the Supreme Being emanates or diffuses its essence into all its products, both as individuals and as a group, it is the unity in the world. In a note of 1671, Leibniz asserts that the *ratio* of things will be “[t]herefore in Mind, that is, in the one in many things. Therefore, [it will be] in Harmony, that is, in the unity of many things, that is, diversity compensated by identity. Moreover God is the one that is all things.”³¹

Leibniz is explicit in the texts of 1668–71 that God is the unity in the world, but he is less insistent about the fact that God is also the multiplicity in things. As noted above, he clearly maintains in his essay *On transubstantiation* that it is an Idea of God that constitutes the substantial form of a non-human substance, and moreover that each such Idea is different from every other. It follows that the Ideas of God constitute the diversity among the non-human substances of the world. As he writes: “the Ideas of God are the substances of things.”³² In some notes of 1668, he writes that “an act of God is in the creature although God is everywhere.”³³ Nor do I think that we should be troubled by the scarcity of such explicit statements: for a Christian theist like Leibniz, that God is everywhere and constitutes everything goes without saying; there was no reason to state the obvious. As Leibniz explains in the *Conspectus*, “the eternal” modes of the Supreme Being include its omnipotency, omniscience, and omnipresence.³⁴ The Supreme Being is everywhere and in everything as the emanative cause of the world. It is the unity and the multiplicity in the world, and in that sense is the harmony of things. At the most fundamental level, there is no genuine tension between unity and multiplicity as good-making criteria because they reduce

31. VI ii 283. The Latin is: Ergo in Mente, id est uno in multis. Ergo in Harmonia id est unitate plurimorum, seu diversitate identitate compensata. Deus autem est unus omnia.

32. VI i 512. 33. VI i 513.

34. VI i 495. That God is the unity and diversity in the world seems almost a commonplace among Leibniz's German predecessors. E.g., see Johann von Wower, *De Polymathia Tractatio*, chs. 25–26; Thomasius, *Exercitatio*, 207–17; Scherzer, *Collegii*, 98–104.

to the same thing. In a way that we will discuss more fully in chapter 8, the goal of human life is to recognize the beauty and harmony in things where that consists in discovering the orderliness beneath the apparent chaos, the consonance beneath the apparent dissonance, the divinity beneath the appearances.

Reflective harmony

For Leibniz and his Platonist predecessors, Reflective Harmony is the result of Emanative Harmony. As discussed in section 5 of chapter 5, the close interconnection among creatures was supposed to follow from the fact that they were all emanations of the same perfectly unified thing. The fundamental assumption was that the unity of the Supreme Being would be immanent in the whole of creation. As Philo wrote: “And being superior to, and being also external to the world that he has made, he nevertheless fills the whole world with himself; for, having by his own power extended it to its utmost limits, he has connected every portion with another portion according to the principles of harmony.”³⁵ As noted in section 5 of chapter 5, this harmony among the “portions” of the divine is such that each responds to the activity and states of all the others. We also noted these two kinds of correspondence between created things: sympathy, which exists among all things, and reflection, which appears to apply only to minds or mind-like beings. According to the Relation of Sympathy, each created being corresponds to the activity and states of all creatures; according to the Theory of Reflective Harmony, there is an interrelation among minds such that each mind thinks or reflects all the others so that each may be said to contain all the others. As I also explained in the discussion of these issues, the latter theory has a close connection to the Principle of Harmonized Plenitude, where the relevant idea is that the goodness of the world is partly a function of the variety of the beings within it and partly a function of their interrelations. I will argue in the remainder of this section that the young Leibniz took these tenets from his Platonist predecessors and used them to construct his original theory of Reflective Harmony. As we will see in chapters 9 and 10, Leibniz’s account of Reflective Harmony evolved in significant ways and became more sophisticated between late 1671 and 1676. I will argue in chapter 8 that a subtle but noticeable shift occurs in Leibniz’s thinking between early and late 1671 about the interrelations among creatures. Although in 1670 and early 1671, Leibniz seems to restrict Reflective Harmony to conscious minds, by the end of 1671 he is prepared to apply it to all creatures. For our purposes here, however, it is important to understand that the original theory of universal harmony included a robust sense of the close interconnections among human minds.

The image of the mind as a mirror is a permanent fixture of Leibniz’s mature thought. He first develops this idea between late 1669 and 1671 in

35. Philo, *Concerning the Posterity of Cain*, V.14: Yonge 133.

the *Elements of natural law*. In our discussion of Emanative Harmony above, we turned to these notes for some of Leibniz's most explicit comments about God as the unity and multiplicity in the world. It is not surprising that we should also find there his original comments about Reflective Harmony. Leibniz's main concern in these essays is with the moral development of human beings. It is in this context that he presents his first thoughts about the interrelations among creatures. According to Leibniz, the journey to knowledge and wisdom requires a unity of minds. The image of the mind as a mirror was developed in this context. Its original use occurs in the second note for the *Elements of natural law* which was written between the autumn of 1669 and the summer of 1670. Leibniz argues:

If God did not have rational Creatures in the world, he would have the same harmony, but devoid of Echo, the same beauty, but devoid of reflection and refraction or multiplication. On this account, the wisdom of God required [exigebat] rational Creatures, in which things might multiply themselves. In this way one mind might be a kind of world in a mirror, or a dioptr, or some kind of point collecting visual rays.³⁶

There is much to be said about this provocative passage. We find here the basic thesis of this section, namely, that universal harmony consists in Emanative and Reflective Harmony, and moreover that the latter depends on the former. The harmony to which Leibniz refers in the first sentence is Emanative Harmony; it is the essence of God variously manifested in a unified fashion. The second kind of harmony is Reflective Harmony, which develops out of the former and exists in embryonic form in this passage. It finds its feet in the assumption that the world is made better by the close interrelations among minds. The visual images here are stunning: by acting as a mirror, each mind reflects, refracts, and multiplies the beauty inherent in Emanative Harmony. The assumption is that the reflection of things in the world is a good thing because each individual creature, as an emanation of the essence of God, is fundamentally good. Also in the passage, we find a justification for perceptual fecundity, something that will become more important to Leibniz in the mid-1670s. According to the Principle of Harmonized Plenitude, the goodness of the world is partly a function of the variety of beings within it. What Leibniz adds here is the fascinating idea that the perceptions of minds will add significantly to the multiplicity and variety in the world. That is, the goodness of the world will be increased through the existence of perceiving or reflecting minds. In short, the goodness inherent in Emanative Harmony entails the goodness of reflection.

In fact, for Leibniz, Reflective Harmony has enormous ethical and epistemological benefits. I will unpack some of the epistemological implications of the mind as a mirror in section 4. Given our interest now, namely, to understand Leibniz's original views about the interconnections among crea-

36. VI i 438. For an important account of the special significance of rational minds in Leibniz's conception of the best world, see Rutherford, *Rational Order*, esp. 17f, 46–53, 62f.

tures, it will be helpful to identify exactly what it is about Reflective Harmony that increases the ethical goodness in the world.

In another note from the *Elements of natural law*, Leibniz makes clear the ethical significance of the reflective nature of mind:

But as a double reflection can occur in vision, once in the lens of the eye and once in the lens of a tube, the latter magnifying the former, so there is a double reflection in thinking: for since every mind is like a mirror, there will be one mirror in our mind, another in other minds. Thus, if there are many mirrors, that is, many minds recognizing our goods, there will be a greater light, the mirrors blending the light not only in the [individual] eye but also among each other. The gathered splendor produces glory. This is part of the reason for the deformity in mind: otherwise there would be nothing in the shadow to be magnified through the reflection of the mirrors.³⁷

Through a fascinating blend of modern scientific images (of lenses and magnification) and ancient ones (of shadows and light), Leibniz implies that moral development depends on the intimate relation among minds. By such means, we not only arrive at the Platonist doctrines of Theory of Reflective Harmony and the Principle of Harmonized Plenitude, we come to glimpse their close connection in Leibniz's thought. According to the former principle, there is an interrelation among minds that consists in the fact that each mind thinks or reflects all the others in such a way that a change in one is reflected by a change in another. Reflective Harmony will increase goodness in the world in a straightforward way: because of the close interconnection among minds, an increase in the goodness of one will be reflected in all the others. In other words, every mind perceives what happens to every other one, at least with regard to its goodness. It is important that the relation among minds is such that they can only aid, and not detract from, their mutual moral development. This reveals the close connection between reflection and the Enhancement Relation in Leibniz's original account of Reflective Harmony. According to the Principle of Harmonized Plenitude, the goodness of the world is partly a function of the variety of beings within it and partly a function of the order among beings, where this is understood primarily in terms of their Enhancement Relation. According to the latter, for every being S that has an Enhancement Relation to a being R, the relation of S to R is such that an increase in the goodness of S will promote an increase in R which is non-reciprocal (that is, the increase in R will not then promote an increase in S). The implication of the *Elements of natural law* is that Reflective Harmony adds to the goodness of the world because reflection is just such an Enhancement Relation. There is even a suggestion in the text that while minds can increase the goodness of other minds, only God can decrease them. For example, Leibniz explains that because of God's love of harmony, "an harmonic mind cannot become distorted except as a punishment."³⁸ In other words, the Enhancement Relation among minds

37. VI i 464: L 137. Unfortunately, the exact date of this text is not known; it was written sometime in 1670–71.

38. VI i 444.

appears to be such that only an increase in goodness is possible. In general terms, then, the Reflective Harmony among minds is good because it involves the perception of the variety of the instantiations of the divine essence and because it guarantees an increase in the ethical goodness among minds (and prevents the possibility of a decrease).

For our purposes, the main point here is that each mind is intimately related to every other so that it (unconsciously) perceives the others. That is, there is a unity among minds such that each reflects all the others (at least) with regard to their moral goodness. It is appropriate to ask at this point whether or not Leibniz was prepared to extend this sort of Reflective Harmony to other creatures as well. Because his main concern in the *Elements of natural law* is the moral development of human beings, it is not surprising that his primary focus is on the special connection among human minds. Given the close interconnection among conscious minds, it is tempting to assume that related texts contain evidence of some sort of universal sympathy or reflective connection among all creatures. In fact, there is no textual evidence to this effect. Rather, Leibniz suggests a distinction between the Reflective Harmony among human minds and the harmony that exists for everything else. In an early note from the *Elements of natural law*, he explains that God “likes what concerns harmony in nature and He likes the particular harmony of minds.”³⁹ It will be important to our discussion in chapter 8 that prior to May 1671, Reflective Harmony is restricted to human minds.

There is more to say about the epistemological and ethical benefits of Reflective Harmony, and I will return to these topics in section 4. What is particularly relevant here is the fact that in Leibniz’s original thinking about universal harmony, the Reflective Harmony among minds plays a significant part. For the sake of convenience, let’s summarize Leibniz’s original two-part conception of harmony as follows.

- (1670–early 1671) *Emanative Harmony* claims that God is the variety in the world in that every creature is an inferior instantiation of the divine essence, and that God is the unity in the world in the two-fold sense that each individual creature and the totality of creatures instantiate the divine unity so that each individual is a unity and the totality is an interrelated whole.
- (1670–early 1671) *Reflective Harmony*, which is closely related to the Platonist assumption articulated in chapter 5, claims that there is an interrelation among human minds such that each mind thinks or reflects all the others, at least with regard to their moral development.

It is worth emphasizing that there is no evidence of the Relation of Sympathy in the texts of 1668–early 1671.

39. Ibid.

2. Mind

In 1668–71, when Leibniz was deciding on Emanative Harmony as the dominant feature of God's creation, he was developing his theory of mind along consistent lines. It was surely important to explain how the active principles or substantial forms in substances could accommodate Emanative Harmony. It will be helpful at this point to take inventory of Leibniz's proposals about mind. In chapters 2 and 4, I noted that for the young Leibniz only something incorporeal could serve as the active principle in created substances; in chapter 3, I articulated Leibniz's Original Theory of Corporeal Substance according to which God is the active principle in non-human substances. In chapter 4, we saw that in 1670, Leibniz replaced this active principle with a momentary mind, and that the Principle of Causal Self-Sufficiency demanded that each substance have its own mind-like substantial form. In the last section, I displayed Leibniz's original conception of harmony without any reference to his shifting views about substance and mind during the period. In fact, Leibniz's conception of Emanative Harmony was unaffected by this transformation in his account of substance. In its original form, harmony only demanded that each creature be an instantiation or expression of the essence of God: whether the active principle in the creature was divine mind, as in the essays of 1668–69, or momentary minds, as in the texts of 1670–71, Emanative Harmony did not specify exactly *how* the creature should satisfy this demand. But if the original doctrine of Emanative Harmony did not say very much about exactly what the creature should *be*, it demanded a good deal about what it should *do*. The metaphysical responsibilities of substance were enormous. Leibniz's Metaphysics of Substance required that the fundamental entities in the world be substances, and that these substances be essentially active. During the period 1668–71, Leibniz integrated the Platonist assumptions about knowledge, creation, and unity with the Aristotelian ones about self-sufficiency, activity, substantial forms, and matter. I would now like to display how some of the Platonist assumptions articulated in chapter 5 are used in the early writings and how they bear on the topic of the mind or the active principle in corporeal substance.

In the discussion of *On the incarnation of God* in section 3 of chapter 4, I unearthed some assumptions about substantial unity and substantial activity. For our purposes here, the relevant claims from the 1670 Substantial Form Assumption are as follows: for every created mind-like substantial form F in a corporeal substance S, F acts constantly and, moreover, the substantial unity formed between F and the passive principle P in S depends on the constant activity of F on P. In that discussion, we also noted that in *On the incarnation of God* Leibniz claims that the activity of God on creatures is one of creation. According to Leibniz, "God does not act on bodies except by creating;" moreover, mind "is the instrument of God" and is "unified with God."⁴⁰

40. VI i 534. See ch. 4, n. 44.

Against the background of the Platonist assumptions, we are now prepared to articulate more thoroughly the relation between unity, activity, and self-sufficiency in Leibniz's thought. To speak somewhat crudely, Leibniz takes the Supreme Being Assumption, which asserts that each of the features of unity, perfection, self-sufficiency, and reality is a function of the other, and the Doctrine of the Hierarchy of Being, which claims that only God can create and destroy human souls, and grounds them firmly in the notion that a substance is what is fundamentally active. Leibniz's belief in the essential connection between the activity of mind on the one hand and its unity, perfection, self-sufficiency, and indestructibility on the other dates from his early post-graduate days. For example, in a published text of 1664, he discusses the problem of the identity of individual things and considers a solution that interweaves activity, unity, self-sufficiency, and indestructibility. He speculates that the source of identity is the *vivens unum*, the living unity, which is indivisible and acts as "a fountain of life," and he explains that "as the Rabbis maintain," the soul is "like a little house in a certain part of the body, which no power can destroy."⁴¹ The position here assumes that vitality, self-sufficiency, and unity are indelibly linked, and the suggestion is that the indestructibility of such beings is supposed to follow from their vitality or activity. The text evokes an image of the human soul as an impenetrable and eternal fortress, as though such vital unities cannot be destroyed because they have mightier metaphysical muscles than other beings. The Supreme Being Assumption helps us to grasp that their mightiness is a function of their perfection, which, according to Leibniz, is rooted in their activity. Another way of making the point is as follows: as discussed in section 4 of chapter 5, a thing S has unity if and only if it participates in the unity of the Supreme Being; according to Leibniz, a mind is divine-like, which means (among other things) that it has unity *per se* because it participates so fully in the divine unity; it follows from these facts about unity and mind that mind cannot be destroyed by anything other than the supreme source of its unity.⁴²

The close connection between the activity, perfection, and indestructibility of mind persists in the writings of 1668–71. In the essays included in the *Catholic demonstrations*, we find the same connection between the activity of mind on the one hand and its perfection, unity, and self-sufficiency on the other. For example, in the second part of the *Conspectus*, entitled "Demonstration of the Immortality of the Soul, and of Incorporeality" and written in 1668–69, Leibniz lists several topics which at first glance are not obviously

41. VI i 91. The young Leibniz also asserts that "the Rabbis" claim that the soul resides in a little bone that cannot be destroyed. See II i 117. The belief that some bones are "deathless" is mentioned by Plato in the *Phaedo*, 80d.

42. It also follows that anything that a mind organizes or diffuses will itself instantiate the unity of the mind. That is, there is a hierarchy of unity and self-sufficiency from the Supreme Being to mind-like form to the passive principle of the form. E.g., Leibniz writes: "As God survives when creatures are destroyed, so Mind survives when the body is destroyed." See VI ii 287.

related to immortality. Of the six subjects listed, only the final one, a discussion of the argument presented by Kenelm Digby for the immortality of the soul, explicitly mentions the issue. The other five topics concern the activity of mind, where the assumption is that the immortality of the soul is supposed to follow from the fact that only God can destroy an active thing. One of these is particularly interesting: Leibniz intends to argue for the immortality of the soul based “on self-motion, following Plato.”⁴³ Comments such as this in the *Conspectus* suggest that Leibniz conceived the soul as something like a self-perpetuating unity, and that he took this view to be Platonist.

Elsewhere in the *Conspectus*, Leibniz makes it clear that besides indestructibility, the metaphysical mightiness of minds entails that only God can create them. According to Leibniz, human minds are propagated “from God through Traduction.”⁴⁴ As noted in section 7 of chapter 5, the theory of traduction is roughly the view that the souls of all human beings were present in Adam and were passed down and distributed among subsequent generations. The theory, which was motivated by the belief that human souls could not arise naturally, is closely related to the Platonist Causal Seed Doctrine, according to which God created everything “in the beginning” as seminal *rationes* so that they would remain dormant until the appropriate time. In the *Conspectus*, Leibniz embraces the traduction of souls and, by the winter of 1670–71, is prepared to apply the theory to mind-like substantial forms in non-human substances. As I noted in chapter 4, when Leibniz populated nature with momentary minds, he explained their creation by traduction: according to Leibniz, a momentary mind propagates itself through traduction. It would seem, then, that in the period 1668–71, only God can create and destroy minds. As Leibniz writes to Oldenburg in September 1670, the activity of mind is “extraordinary” and “perpetual.”⁴⁵

The perfection, unity, and self-sufficiency of mind is based in its activity. But what sort of activity is this? Not only does the mightiness of minds mean that they can neither be destroyed nor created by natural means, it also is supposed to imply that they are indefatigable. As we saw in chapter 5, section 4, for Platonists like Plotinus and Proclus, emanative causation is not restricted to the One: other beings may produce through emanation. In chapter 4, I discussed in some detail the account of conscious mind that Leibniz composed in 1670, and I noted that there are few extant comments about the nature of mind prior to that time. Although in *On the incarnation of God*, Leibniz insists that mind acts constantly, he does not explain how it continues to do so. The easiest way to explain the indefatigability of mind is to assume that created minds act through emanation. In a published work of 1667, Leibniz offers some evidence to this effect. He writes: “Thought is a sensible Quality of the human intellect, or [seu] it is a sensible quality of that thing, I know not what, within us which we observe to think. But we cannot explain . . . what it is to think. . . . This Quality is also in God and

43. VI i 495. 44. VI i 496. 45. II i 64.

Angels."⁴⁶ Since we know that, for Leibniz, God acts through emanation, it would seem to follow that the divine mind thinks by such means. What Leibniz suggests here is that in much the same way that the Supreme Being emanates its thoughts without depleting itself, so do the minds of angels and human beings.

The closest that Leibniz comes during our period to a direct comparison between the emanative activity of God and that of mind occurs in two letters of May 1671. As discussed in the previous section, Leibniz describes the relation between God and creatures in *On transubstantiation* as one of diffusion, and insists that God is "diffused through everything."⁴⁷ It is therefore striking that in the letter to Johann Friedrich of May 1671, Leibniz says that the passive principle in a corporeal substance "is diffused" by the mind or substantial form and that the mind acts "without being diminished."⁴⁸

Moreover, in a letter to a Dutch Copernican, Leibniz describes his *Schediasma* and the important implications that follow from his proposals in that two-part work. He writes to Lambert van Velthuysen in May 1671:

I will expose the *ratio* as to how God can make a body which is produced by a kind of motion, so that it is naturally indissoluble . . . even if all the strengths in the world join together; what is more, I will show that with a body, into which a mediating mind has been implanted, the mind is able to multiply itself through Traduction without new creation, with no loss to the incorporeal [principle], something which before now no one has been able to show clearly and distinctly.⁴⁹

There is much that is interesting here. Leibniz insists on the fact that certain bodies are indestructible, and the suggestion is that their indestructibility depends on the mind at their center. But how is the indestructibility of a body supposed to follow from its mind? Let's turn for help to the (1670) Substantial Form Assumption, whose relevant implication here is that there will be a substantial unity formed between the substantial form F and the passive principle P in a corporeal substance S just in case F acts constantly on P. As explained in chapter 4, by so acting on P, F will produce and maintain an organization with P that constitutes the nature of S. Following this assumption, the unity of a body persists as long as the activity of its mind does. So what about its activity? In the quoted passage, Leibniz is explicit about the fact that the mind in the body will multiply itself through traduction. This means roughly that each present mind contains the causal seeds or seminal *rationes* for future minds in its nature. For our purposes, however, it is particularly important that the mind is capable of doing all

46. VI i 285–86: L 89. For the moment, I am ignoring the constant thinking that minds are supposed to do. This feature of mind, which is identified in the (1670) Substantial Form Assumption, will be discussed in ch. 8.

47. VI i 511.

48. II i 113. Also see II i 115–16. I will discuss this diffusion relation at greater length in ch. 8, sect. 4.

49. II i 97.

this with “no loss” to itself. The point is that created minds are like divine mind in that they contain in themselves the seeds of what will follow and act through emanation so that they do not deplete their power. As Leibniz announces to Van Velthuysen: “From these and other demonstrated matters concerning mind, many new things follow.”⁵⁰

The moral to the story of this section is that, for the young Leibniz, created minds are modeled on divine mind and therefore are fundamentally self-sufficient unities that act through emanation.⁵¹

3. Creation stories, 1668–early 1671

For Leibniz, his teachers, and many theists, divine omniscience implied that at the creation of the world, God knew everything that would subsequently happen. This assumption, when combined with the free choice of God and the notion of Emanative Harmony articulated in section 1, yields some weighty metaphysical results. In this section, I will argue that some of Leibniz’s most characteristic doctrines were such results. But before we turn to the relevant texts, let’s speculate about the conjunction of these commitments. My *Speculative Creation Story* has five parts.

Speculative creation story

For a Platonist theist who believed that the Supreme Being chose what to create, it would be reasonable to assume that there were emanative options available. For our purposes here, it is important to distinguish between such options and the possible instantiations of a particular option. In brief, an emanative option is a way that the Supreme Being could emanate its essence. As noted in section 4 of chapter 5, the essence of the Supreme Being consists in the divine attributes. It follows that each emanative option is a different way of combining those attributes. An analogy may help at this point. Think of the divine essence as a set of well-defined characters that may be used in various narrative alternatives, and think of each emanative option as a version of a story within which the characters act characteristically. Like the emanative options, each narrative option contains all the characters acting out their well-defined nature, but each narrative differs from every other in the details of how the characters interact. In one version of the story, the good folks join together and justice is quickly triumphant; in another, the

50. II i 98. For other evidence of the similarity between divine and created minds, see the remainder of this letter.

51. During his Paris years, Leibniz puts the point succinctly in some notes on Plato’s *Phaedo*. Making explicit the fact that created mind-like forms are unified with and, in that sense, participate in the divine mind, Leibniz writes in March 1676: “*God* is indeed the form of life” and whatever “participates in life is not able to be distinguished.” See VI iii 295. As the student of Leibniz’s mature thought knows, Leibniz persists in emphasizing the close relation between activity, unity, and indestructibility. See, e.g., G II 72, 76; G IV 470; II i 124.

bad guys conspire and justice takes longer to win the day. When the Supreme Being chooses among emanative options, it is like selecting among narrative options: in one emanative option, the divine attributes relate in one way; in another, they relate differently. It is important to see that the emanative options can be very different from one another, just like the versions of the story. There is however an important disanalogy between the creation of a narrative option and that of an emanative one. As our account of emanative causation in section 4 of chapter 5 made clear, the emanation of the divine attributes entails a loss of perfection. According to the Theory of Emanative Causation, for a being A that is more perfect than a being B, A can emanate its attribute f-ness to B in such a way that neither A nor A's f-ness is depleted in any way, while B has f-ness, though in a manner inferior to the way it exists in A.

Once the Supreme Being decides on an emanative option, two things follow. First, the proposed combination of the divine attributes is set. This means that among the emanative options or possible emanations of the divine essence, one has been chosen. Second, there will be a number of different expressions or instantiations of that essence.⁵² Let's return to our analogy. Think of the chosen emanative option as analogous to the selected story, where the interrelations among the characters has been fully conceived. Further, suppose that the fully conceived story can be translated into a number of different languages where each translation is a complete version of the story. In this case, each translation will differ radically from the others in that it will have different sentences, but each nonetheless will be an account of the same tale. Similarly, each instantiation of the chosen emanative option is different from the others, but each is also an expression of the same thing. For the sake of clarity, let's agree to the following terminology. Among various emanative options, the Supreme Being chooses one of the infinity of ways to combine its attributes, that is, it chooses one among infinite versions of the divine essence. Let's call the chosen emanative option 'the (selected) divine essence.' Having selected this emanative alternative, God then creates it. The process of creation is one of emanation, where God emanates the (selected) divine essence and thereby produces and sustains the created world. Within the created world, there are individual creatures. Each creature is what we will call 'an instantiation' of the (selected) divine essence. In sum, through emanation, God instantiates the (selected) divine essence in each individual created thing. Let us summarize the first part of our Speculative Creation Story as follows:

- (1) Among an infinity of emanative options (each of which is a version of the divine essence), the Supreme Being chooses one. God emanates this (selected) divine essence so as to create and sustain the world. Each in-

52. According to the standard view of the Supreme Being – whether the Plotinian One or the theistic God – both the Supreme Being and creation stand outside of time. Therefore, the episodes that constitute creation are atemporal; the priority suggested in our story by words like 'first' and 'then' is a logical and not a temporal one.

dividual created substance S is an instantiation of the (selected) divine essence.

Nor is that all. When we combine this first part of the speculative story with a commitment to divine foreknowledge, some weighty metaphysical consequences follow. For a Platonist theist who believed that the Supreme Being has foreknowledge about *all* creaturely occurrences, it would be natural to think that “in the beginning” God knew *exactly* how, for each individual creature, it would behave in all its details throughout the course of its existence. In this case, God would conceive the details of each instantiation of the (selected) divine essence. To help us in the next part of our story, let’s remind ourselves briefly of two related senses of ‘essence,’ which were widely accepted in the seventeenth century and are relevant here. First, an essence is what is given in the definition of the thing and what can be grasped by the intellect; second, it constitutes the nature of an individual and that from which its properties flow. It is striking that Micraelius asserts in his *Lexicon Philosophicum* that the “properties emanate from the essence of the thing.”⁵³ Scherzer, for example, defines an essence as “what is first conceived in a thing, without which the thing is not able to be; it is what is fundamental and the cause of other things which are in it.”⁵⁴ We need to keep a firm grip on the difference between an essence as something conceived and as something contained in an individual created thing from which the properties of the thing (somehow) flow or emanate.

If we assume that God has foreknowledge about everything that every creature will do and if we accept the part of the Speculative Creation Story thus far articulated, then it would seem to follow that for every instantiation of the (selected) divine essence, God has a fully articulated conception of the thing. That is, once we assume the complete foreknowledge of God concerning all the details of all created beings, then it would seem to follow from Emanative Harmony that in the process of creation, God will conceive a fully articulated individual essence for every creature. For the student of Leibniz, this should sound familiar. According to the mature Leibniz, for every substance S, S has a concept that is so complete that it contains in it every predicate that will truly be predicated of S. What I am suggesting here is that for someone committed both to divine foreknowledge about all substantial features and to Emanative Harmony, it would be natural to think that there is a complete concept for every created substance. That is, it is reasonable to suppose that as part of the creation of the world, the Supreme Being will conceive the essence of every individual creature as thoroughly as possible. In keeping with the first part of our story, the conceived essence of an individual substance, S, is two things at once: it is a version of the (selected) divine essence (and hence a version of the divine attributes) and it is the complete concept of S. Let’s summarize the second part of our Speculative Creation Story in the following way:

53. Micraelius, *Lexicon Philosophicum*, 382.

54. Scherzer, *Vade Mecum*, 77; also see Goclenius, *Lexicon Philosophicum*, 164.

- (2) For every created individual substance S, there is a complete concept in God's mind that contains all the predicates of S and that is a version of the (selected) divine essence.

Let's push on. Once we assume that the Supreme Being has a complete concept for every individual substance S, it is reasonable to think that every mind-like substantial form F contains a set of instructions for how to act and that the set of instructions is the ontological correlate of the concept. That is, once the Supreme Being conceives the fully articulated individual essence or complete concept, it actualizes that conceived individual essence by turning it into the set of instructions for the activity of the being throughout the course of its existence. In this case, the created individual S will be two things at once: it will be the actualization of the complete concept of S and it will be an instantiation of the (selected) divine essence, which God emanates to the creature. This part of our story fits nicely with the Aristotelian assumptions about self-sufficiency in general and the role of the substantial form in corporeal substance in particular. According to the relevant part of the (1670) Substantial Form Assumption, for every corporeal substance S, S will have a mind-like substantial form F that contains the principle of activity of S and a set of instructions given it by God for the activity of F on its passive principle P. Because the instructions in F will tell F how to activate and organize P at every moment of S's existence, it will function as the ontological correlate of the complete concept: every predicate in the complete concept or conceived essence of S has a correlate in the set of instructions. As will become clear, the set of instructions constitutes a necessary condition for the truth of the predicates included in the complete concept of S. In order for all the predicates in the concept to be truly predicated of S, it is not only necessary that the F in S have the right set of instructions, it is also necessary that those instructions be perfectly coordinated with the instructions in all the other substances in S's causal purview. For example, the coffee stain on Wanda's hand is partly due to her clumsy gesture and partly due to the wet coffee grinds. This account of the actualized essence fits nicely with the description of the activity of mind presented in the preceding section: God emanates the (selected) divine essence to S whose mind-like substantial form then acts according to its instructions. The substantial form is like a transmitter of the divine attributes: it receives a set of instructions about how to instantiate the attributes and then sets about doing so. Let's summarize the third part of our story as follows:

- (3) For every individual substance S, there is a substantial form F that contains a set of instructions that tells F how to activate and organize its passive principle P at every moment of S's existence and that therefore functions as the ontological correlate of the complete concept in that every predicate in the complete concept of S has a correlate in the set of instructions and the instructions constitute the necessary condition for the true ascription of those predicates.

For some readers, our story may have taken an unforeseen turn: it assumes intersubstantial causation. Nor is this incoherent. God might conceive a complete concept for every created substance and yet allow created substances to interact. This is perfectly possible as long as we assume a version of parallelism. If God gave each substance a substantial form with a principle of activity and a set of instructions about how to act, and if God constructed every substance so that their activities were perfectly coordinated, then there could be a complete concept for every substance and yet there could be causal interaction. In this case, the complete concept of S will be true of S only if the instructions in the substantial form F of S are perfectly parallel to the instructions in all the substances with which S interacts. In this case, the stain on Wanda's hand would be included in her concept although the complete *ratio* for the stain would not be contained in her nature. Her nature would only include instructions for how she will behave in relation to the coffee, while the nature of the coffee (assuming that it has one) would contain instructions for how it will behave in relation to Wanda. It is noteworthy that the Principle of Sufficient Reason would neatly apply to such a world: for every feature of every substance, there would be a complete *ratio*. However, the Principle of Causal Self-Sufficiency would not extend to all substantial features: the stain on Wanda's hand would not strictly belong to Wanda due to the fact that although there is a complete *ratio* for the stain, that *ratio* is not contained in the nature of Wanda. From this account, it follows that for the individual substances of the world, their concepts can be complete and yet they can interact. Let's summarize the fourth part of our Speculative Creation Story as follows:

- (4) There is intersubstantial causation among substances and (*Weak*) *Parallelism* where the latter is understood as follows: for every substance S, the set of instructions in the substantial form F of S is constructed so that the actions of S will perfectly correspond to those of all the substances with which it interacts, with the result that all the predicates contained in the complete concept of S will be true of S.

As a postscript to our Speculative Creation Story, let's consider what would result from the combination of our story as outlined and the Principle of Harmonized Plenitude, whose relevant claim here is that the goodness of the world is partly a function of the variety of the beings within it. As Aquinas and others were wont to point out, the greater the diversity of being, the better. When we apply this assumption to the account just offered of individual created substances, the suggestion is that it would be a good thing if each instantiation of the (selected) divine essence were different from every other. That is, the conjunction of the Principle of Harmonized Plenitude and our creation story would seem to imply a version of the Principle of the Identity of Indiscernibles.⁵⁵ Let's summarize this final part of our story.

55. For a brief account of this principle, see Appendix I. A related way to motivate the prin-

- (5) Every instantiation of the (selected) divine essence is different from every other; that is, there are no two created substances with the same individual essence.

I claimed earlier that when we combine the theory of Emanative Harmony and the complete foreknowledge of God, we obtain some weighty metaphysical results. Although our speculative story is not the only way to unpack the implications of these theories, it is a reasonable way to do so. That Leibniz toyed with something very like this story will be evident below. But another motivation behind this elaborate speculation is to provoke. Within the context of the Aristotelian and Platonist assumptions articulated in chapters 2 and 5, the Second Theory of Corporeal Substance described in chapter 4, and the theory of Emanative Harmony displayed here, it is possible suddenly to see a number of Leibniz's mature tenets in a new light. In the writings of the mature Leibniz, key features of his metaphysics are put forward as closely linked. Following Leibniz's lead, scholars have firmly believed, for example, that the account of substance as what has a complete concept is crucially tied to Preestablished Harmony. Leibniz's early texts suggest otherwise. As our story reveals, Leibniz could have developed something very close to the Complete Concept Theory of Substance and yet have accepted causal interaction. But the speculative story is also provocative in that it reveals what might have motivated some of Leibniz's mature tenets. It shows that a commitment to the foreknowledge of God, the theory of Emanative Harmony, and the demand for a robust self-sufficiency of substance implies a number of details about how individual corporeal substances might be understood to instantiate the divine essence. We can be certain that Leibniz accepted the foreknowledge of God.⁵⁶ If I am accurate in my proposals about his early Metaphysics of Substance and about his commitment to Emanative Harmony, then we would expect to find him speculating along lines similar to the ones just presented.

Emanative creation story

In the texts of 1668–69, we do find Leibniz thinking along lines similar to our creation story. For the sake of convenience, let's call his version the *Emanative Creation Story*. The earliest and most important text for our purposes is *On transubstantiation*. The essay is worth a careful analysis in this context.

In chapter 2, section 2, I unearthed the metaphysical principles in the theological essays of 1668–69 and claimed that *On transubstantiation* contained some of Leibniz's first pronouncements on individual created substance. We saw there how he finessed the problem of transubstantiation: he claimed that the corporeal essence of the body remained the same while the active

principle concerns the fact that according to Leibniz, each substance or essence has a different perspective on the world. I will discuss this in the next section.

56. See, e.g., VI i 495.

principle of the substance changed. The bread continues to smell and taste like bread even though its active principle has been replaced by that of Christ. However, *On transubstantiation* also contains Leibniz's first articulation of Emanative Harmony. Once Leibniz has described the basic features of created substances and outlined the strategy of his solution to the problem of transubstantiation, he goes on to treat the exact relation between God and creatures. It is now time to consider the *Metaphysics of Divinity* in this essay. In an attempt not to overestimate the importance of our Speculative Creation Story, let's first consider the Emanative Creation Story presented in Leibniz's text without the assumptions and distinctions displayed in our story.

In the main demonstration of *On transubstantiation*, Leibniz asserts that "the Substance of [a non-human] body is union with sustaining mind," while "the union of God with creatures" is "an Idea."⁵⁷ Although he claims that there is "a substantial form or Idea" unique to every non-human substance, he does not explain exactly what an Idea is.⁵⁸ In the "Scholia" of the essay, the details of the relation between God, Idea, and individual non-human substances are presented. For each non-human substance, there is a corresponding Idea in God's mind.⁵⁹ Leibniz makes the following three points: (1) "although the divine mind is the same [for all creatures], the concurrent divine mind is not. For the divine mind consists of the Ideas of all things;"⁶⁰ (2) "the composition of Ideas does not constitute parts of the divine mind;" and (3) "[i]n God there are infinitely really diverse Ideas, yet God is indivisible." Concerning the difference between human and non-human substances, he explains that "the Ideas of God are the Substance of things;" for human beings, "the Idea of God is not the substance," because humans "are moved by [their own] mind."⁶¹ In short, God has an infinite number of diverse Ideas that are products of the divine mind and that somehow are in the divine mind without being a part of it. Because "the divine mind is the same" for all non-human corporeal bodies, Leibniz acknowledges that some might object "that there is one substantial form for all bod-

57. VI i 509: L 116.

58. VI i 509: L 116. In order to solve the problem of the Eucharist, it is important for Leibniz to be more precise about what exactly replaces the substance of the bread and wine: if God is the principle of activity for the bread and the wine, then in what sense is there a change in substance when the substance of the bread is replaced by that of Christ? In other words, what is the criterion of identity for a principle of activity that would make sense of the theological requirement that the substance of the Eucharist becomes Christ?

59. Some of the language of the essay strongly suggests occasionalism: for example, Leibniz talks about the "concurrent mind" of God, which is somehow the principle of activity of every non-human substance. But the position in *On transubstantiation* is not that of the occasionalist. Given the great emphasis that Leibniz places here and in related texts on the *per se* subsistence and activity of substances, it is surprising that some commentators have assumed that the position here is a version of occasionalism.

60. VI i 511: L 118. The Latin in this last sentence is "Mens divina enim Ideis omnium rerum constat."

61. VI i 511–12: L 118.

ies, the concurrent divine mind.” But he insists: “this does not follow. Since . . . the Idea of thing A is one thing, the Idea of B another, the result is that one Idea of the divine mind concurs with A, another with B.” We should understand these Ideas, according to Leibniz, in relation to the views of both Plato and Aristotle: “The Idea of Plato is the same as the substantial form of Aristotle. For it is apparent that there is not one substantial form for all bodies but a different one for different bodies. . . . The substance of each [non-human] thing is not so much mind as it is an Idea of a concurring mind.”⁶² What Leibniz offers here is a clever mixture of Platonist and Aristotelian elements and terminology: each Idea in God’s mind is like a Platonist Idea in that it is an essence (albeit of an individual thing), but it is also like the substantial form of Aristotle in that it is the organizing principle of the individual substance.⁶³

Let’s be clear. The word ‘Idea’ in the general context of a discussion about the relation between God and creatures is ambiguous: it could be either a Platonist Idea in God’s mind (say, Justice), or a conceived essence of a possible individual which would have been formed by a combination of such Platonist Ideas (Thomasius called such combinations of Ideas ‘rationes’), or an actual instantiation of such an essence in the material world.⁶⁴ For Leibniz, in the essay, ‘Idea’ refers to both of the latter. That is, Leibniz is cleverly playing on the ambiguity of the word to capture the close relation between the conceived essence and the actualized one. The Idea qua conceived essence is what God conceives; the Idea qua substantial form of non-human substances is “an action” of God and is what God produces.

Given the extreme metaphysical demands of transubstantiation and emanation, Leibniz’s theory of Idea is impressive. We saw in section 1 that an Idea is in its divine transcendent source and that it is an act or product of God. The point that I want to emphasize here is that before God produces the Idea qua substantial form, the Idea qua conceived essence is a concept in God’s mind.⁶⁵ In other words, the Idea of an individual non-human substance is originally a conceived essence and then an actualization of that concept. There are two points to make. First, Leibniz finds this dual status of

62. VI i 511–12; L 118.

63. It was common for Platonists to include the Idea of an individual essence among the other Ideas. For example, Plotinus maintains there are such Ideas in the Intelligible realm. It seems that Plotinus himself saw a connection between the Ideas of Plato and the forms of Aristotle. Leibniz’s suggestion, therefore, is neither radical nor original.

64. In fact, Adams offers another alternative in *Leibniz*, namely, that the Idea “is the idea of the body,” which he says “foreshadows Leibniz’s later view in which the body of a monad is the body which that monad perceives most distinctly” (360). There is no reason to take this alternative seriously. Not only does much of what Leibniz says in the text flatly contradict Adams’ interpretation (e.g., as noted below, Leibniz insists that an Idea is a substantial form and contains a principle of activity), there are no other early texts in which Leibniz offers a position that is remotely similar. Nor is this the only case where Adams misinterprets a passage by Leibniz due to a confusion about the referent of “Idea.” See his “Phenomenalism and Corporeal Substance in Leibniz,” *passim*.

65. The priority here is logical and not temporal.

Idea attractive. In a related text, he compares it to a point that “is at once common to two lines or intersector” and to an angle that “is at once center and lines.”⁶⁶ Second, he implies that the only difference between the Idea qua conceived essence and the Idea qua substantial form is that the latter has a principle of activity. He insists throughout the text on the importance of the *activity* of the Idea qua substantial form. According to Leibniz, the Idea can act as the substance or substantial form of the (non-human) creature only if it contains a principle of activity that is somehow its own.⁶⁷ As Leibniz makes the point in some related notes on the Eucharist, Ideas qua substantial forms “are things” that exist “outside of” God and, although each Idea is “an act of God,” it is “in the creature.”⁶⁸ The suggestion is that when the Supreme Being acts to produce the Idea qua substantial form, it somehow combines the Idea qua conceived essence with a principle of activity.

Questions arise at this point: what exactly is the Idea qua conceived essence?; how exactly do the Ideas qua substantial forms differ from one another? As we have noted, Leibniz insists that “the Idea of thing A is one thing, the Idea of thing B another,” that is, each substantial form is different from every other. The question of individuation is particularly poignant in the context of the problem of transubstantiation: because the goal is to explain how the substance of Christ is supposed to replace that of the bread and the wine, it is of crucial importance that the Ideas be clearly individuated. We find help with our questions in the following passage:

In the Idea there is contained ideally both passive and active potential, both active and passive intellect. Inasmuch as the intellect concurs with what is passive, to that extent there is matter in the Idea; inasmuch as the intellect concurs with what is active, to that extent there is form.⁶⁹

We need to proceed carefully. The full weight of this comment depends on its careful unpacking. Unfortunately, Leibniz offers no direct help. He uses the distinction between Passive and Active Intellect in only one other text during the period, where he merely states that the Active Intellect is what is immortal in us.⁷⁰ We need to look elsewhere for assistance.

66. VI i 513: L 119.

67. In chapter 2, I discussed the theory of substance proffered in *On transubstantiation*, and explained that because anything with a principle of activity is a substance, it follows that both a corporeal substance and the substantial form that constitutes the active part of that corporeal substance are substances. Therefore, the Idea qua substantial form is also a substance in that it contains a principle of activity. Unfortunately, Leibniz is not very clear on exactly how the Idea has activity and yet is “an act of God.” As argued in chapter 4, it was the difficulty as to the status of activity in created things that led Leibniz to change his Original Theory of Corporeal Substance.

68. VI i 513.

69. VI i 512: L 118. The Latin is as follows: In Idea continetur idealiter et potentia passiva et activa, intellectus agens et patiens. Quatenus concurrit intellectus patiens, eatenus in Idea est materia; quatenus intellectus agens, eatenus forma.

70. VI i 84. In some texts of 1670–71, Leibniz discusses how the “intellect [intellectus]” acquires knowledge. I discuss this point in the next section, but it has no bearing here.

Although the distinction between the Active and Passive Intellect goes back to Aristotle's *On the Soul*, it was interpreted in a variety of ways by philosophers scattered throughout the history of Western philosophy. Roughly speaking, the *intellectus* was taken to be the faculty of understanding that could know the forms or natures of things; its knowledge was the result of the preparation on the part of the Active (or Agent) Intellect of the raw epistemological materials so that once processed, those materials could be known by the Passive (or Material) Intellect. Philosophers sometimes compared the Passive Intellect to prime matter, because it could take on any form (i.e., any object of knowledge) and had no forms in its own nature; they compared the Active Intellect to form because it actualized the potency in the Passive Intellect. Glossing over some complications, when I know the form of Justice, my Passive Intellect has received the processed material that my Active Intellect gives it. Philosophers disagreed a good deal about the details of the interrelations between the Passive and Active Intellects and whether they are mortal or immortal. Relevant to our discussion of Leibniz's conception of the Idea qua conceived essence is the fact that some philosophers (e.g., Alexander of Aphrodisias) equated the Active Intellect with God and maintained that it was immortal, while the Passive Intellect was mortal. Avicenna agreed that the Active Intellect was divine and added a further Platonist twist by saying that it contained within it the Forms, and in that sense was a storehouse of knowledge. Most important for our purposes, however, is the basic point that the Passive Intellect was believed to be *potentially* all forms in the sense that it could receive any form whatsoever as an object of knowledge. It was up to the Active Intellect to give the forms to the Passive Intellect so that they could be known. The crux of the distinction was that the Active Intellect actualized the potentiality of the Passive Intellect, and the Passive Intellect could passively receive all forms.

This sketch of the distinction conforms to the accounts offered in some of the prominent seventeenth-century philosophical lexicons. In his *Lexicon Philosophicum* of 1613, Goclenius says that the *intellectus* is most basically "the principle of understanding," but warns that it is "an obscure notion."⁷¹ He goes on to distinguish between Active and Passive Intellects by noting that the Passive Intellect is "the reception of an object," while the Active Intellect "perfects" the object and thereby prepares it for understanding. In this sense, according to Goclenius, the Passive Intellect counts as the matter and the Active Intellect the form.⁷² In his *Lexicon Philosophicum* of 1653, Micraelius claims that the Active Intellect takes the material represented in the Passive Intellect and "operates on it" so as to produce knowledge,⁷³ while Castanaeus in his *Celebriorum Distinctionum Philosophicarum Synopsis* of 1653 says that the Passive Intellect (what he calls the 'Pos-

71. *Lexicon Philosophicum*, 247. 72. *Ibid.*, 249.

73. Micraelius, *Lexicon Philosophicum*, 550–51. We know that Leibniz had a copy of both the Micraelius and the Goclenius lexicons in his library in Hanover. I would like to thank Gerhard Biller for helping me track down this fact in the Leibniz Archives.

sible Intellect') "universally receives all forms" and that the Active Intellect "is what makes the possible intellect to be in act to all things which are in it potentially."⁷⁴ The important point for our purposes is that in all these accounts, the Passive Intellect receives and "takes on" any material it is given (whatever exactly that material is), while the Active Intellect is an active processor.

With this said, we can return to the passage quoted from *On transubstantiation* and to our questions about the nature of the Idea qua conceived essence and about the difference among the Ideas qua substantial form. In the context just set concerning the Active and Passive Intellect, the passage can be seen to imply that for a (possible) substance S, the nature of the Idea qua conceived essence of S is such that it contains the fully articulated essence of S. Leibniz writes: "Inasmuch as the intellect concurs with what is passive, to that extent there is matter in the Idea; inasmuch as the intellect concurs with what is active, to that extent there is form." What Leibniz suggests here is that, since the Idea qua conceived essence "concurr[s]" with every active and passive state of S, it contains all the predicates of S. According to Leibniz, the Idea contains "ideally both active and passive potential, both active and passive intellect." By comparing the Idea to the Active and Passive Intellect, Leibniz emphasizes the fact that the Idea qua conceived essence contains "ideally" everything that S will do and everything that it will suffer.⁷⁵ In sum, the Idea qua conceived essence of S contains ideally all the features of S.

In this case, the answer to our question about the individuation of the Idea qua substantial form is fairly dramatic. As the instantiation of the Idea qua conceived essence, the Idea qua substantial form will contain the set of instructions for how S will act so as to actualize all the features that the conceived essence contained "ideally." In this case, each Idea qua substantial form will differ from every other in that it will have a different set of instructions. According to Leibniz, his claim that each substantial form differs from every other is "in conformity with the principles of the noblest scholastics and Aristotelian philosophers, those for whom the substantial form is the principle of individuation."⁷⁶ Nor should it be surprising that in the context of the problem of transubstantiation, Leibniz would opt for such a robust principle of individuation. As I said in the discussion of *On transubstantiation* in chapter 2, the matter of the bread and wine remains the same when they are transubstantiated; what changes is their substantial form. As Leibniz writes: "A body that is thus transubstantiated is changed in no way except in the substantial form or Idea of the concurring mind."⁷⁷

74. Castanaeus, *Celebriorum Distinctionum Philosophicarum Synopsis*, 98.

75. The distinction in the Latin between *agens* and *patiens* is hard to capture in standard English. The basic distinction is between what acts and what suffers or is acted upon. To keep as close to this idea as possible, I will use the English verbs "to act" and "to suffer," though the distinction between acting and being acted upon should be kept clearly in mind.

76. VI i 511: L 117. 77. VI i 509: L 116.

Leibniz solves the metaphysical problem of transubstantiation with enormous finesse: the matter remains the same, as does its physical properties, while the Ideas that God emanates to the bread and wine are neatly replaced.⁷⁸ The emanation of the divine mind is replaced by the mind of Christ or, in other words, the Idea that was the substantial form of the bread is replaced by the Idea that is the substantial form of Christ. According to Leibniz, “the mind of Christ can impart operation, action or subsistence both to the glorious body of Christ and to the species of consecrated bread and wine, at the same time, and in varying cases in various places on the earth.” Through emanation of the relevant sort, “the mind of Christ can be present everywhere in the . . . consecrated bread and wine.”⁷⁹

At the outset of my discussion of *On transubstantiation* in this section, I proposed to explicate the Emanative Creation Story presented in that text without the assumptions and distinctions used in our Speculative Creation Story. Having done that let’s now compare our story with the one Leibniz offers in his essay.⁸⁰ We find evidence in *On transubstantiation* of our story. In keeping with part (1), Leibniz writes: “[T]he divine mind consists in the Ideas”⁸¹ and chooses among “the infinitely really diverse Ideas” in its mind to create some so that “[t]he substance of each [non-human] thing is not so much mind as it is an Idea of a concurring mind.”⁸² The result is that God is “diffused through everything.”⁸³ These Ideas are “in God” and yet “are the substances of things.”⁸⁴ Although Leibniz is silent in *On transubstantiation* about how exactly God selects among the Ideas, in related notes on the Eucharist, he distinguishes between what the Supreme Being thinks and what it does. According to Leibniz, what God does follows from what “he wishes and holds for the best.”⁸⁵ It would seem that the Supreme Being thinks or conceives an infinite number of possible individuals, decides which group of these “holds for the best,” and then acts accordingly. In keeping with parts (2) and (3) of our story, Leibniz explains that each Idea contains “ideally” both passive and active potential and yet each Idea is the substantial form of its substance. How exactly does it do both? According to our Speculative Creation Story, for each individual created substance S, there will be a complete concept of S in God’s mind and a substantial form F in S that contains the set of instructions for the activity of F. I suggested that the set of instructions in F is the ontological correlate of the complete concept. *On transubstantiation* offers significant evidence for this view since the Idea is first a fully conceived essence of S and then, when joined with a principle of activity, becomes the substantial form of S (where S is a non-human substance). That is, the Idea qua conceived essence is a complete

78. That Leibniz offers a coherent solution to the problem is clear; that he would have convinced his contemporary Roman Catholics is unclear.

79. VI i 510: L 116.

80. For a summary of the five parts of the Speculative Creation Story, see Appendix II, ch. 6.

81. VI i 512: L 118. 82. VI i 511–12: L 118. 83. VI i 511.

84. VI i 512: L 118. 85. VI i 513: L 119.

concept, while the Idea qua substantial form contains the ontological correlate of the complete concept in the guise of a set of instructions for the activity of F. Just as part (3) of our speculative story demands, the Idea qua substantial form contains both the principle of activity of F and the instructions for how F will act.

The one part of our speculative story about which *On transubstantiation* is silent is part (4), which concerns causal interaction and (Weak) Parallelism. However, there is reason to believe that Leibniz also accepted these tenets. During the period 1668–69, he sometimes talks as though substances do causally interact,⁸⁶ and there is no evidence of the denial of intersubstantial interaction. That is, there is reason to believe that during the period under discussion Leibniz was prepared to admit intersubstantial causation. If he does admit such causation and if he endorses parts (2) and (3) of the Speculative Creation Story, then it would seem to follow that he also must accept (Weak) Parallelism. As implied in the discussion of parts (3) and (4) of our speculative story, the set of instructions in the substantial form F of a substance S is a necessary but not sufficient condition for the truth of the predicates contained in the complete concept of S. In a world of intersubstantial causation, all the predicates contained in the complete concept of S will truly apply to S only if (Weak) Parallelism is also true. In other words, if I am right in the attribution of parts (2) and (3) of the Speculative Creation Story to Leibniz and if he accepts intersubstantial causal interaction during the period, then it would seem to follow that he also endorses (Weak) Parallelism.

Concerning the final part of our Speculative Creation Story, *On transubstantiation* employs something very like the Principle of the Identity of Indiscernibles. As noted above, each substantial form and hence each (non-human) substance differs from every other. Since we can comfortably assume that human substances also differ, the world seems to contain no two substances that are identical.

Did Leibniz really accept such a radical position in 1668–69? That is, was his Emanative Creation Story so similar to our speculative story? There is some reason to balk at this point and to worry about reading too much into *On transubstantiation* in general and into Leibniz's comparison between the Idea and the Active and Passive Intellects in particular. How certain can we be that in the late 1660s, Leibniz took there to be a complete concept for every substance and an ontological correlate in the substantial form for every such concept? Let's consider other textual evidence. In the *Conspectus*, Leibniz lists some of "the eternal modes of God." In notes that he added to the text, he writes about the modes of omnipresence and multipresence: "God knows everything and in this way all properties are contained in the definition; this can be illustrated admirably through a numerical example, e.g., whoever knows 3, knows it to be 1+1+1."⁸⁷ Given that the context here

86. E.g., VI ii 165; II i 23–24; VI i 286–87.

87. The note could have been added any time between 1671 and 1676.

is that of the relation between God and creatures, we can reasonably assume that the knowledge under discussion is knowledge of creatures. If we assume that the 3 is analogous to the complete concept or, as we described it in our Speculative Creation Story, the fully articulated conceived of a possible substance, then it is surely possible that what the Supreme Being knows when it knows that “all properties are contained in the definition” is all the properties that are contained first in the conceived and then in the created individual essence. That is, it knows the complete concept of the created substance. Moreover, the notes that Leibniz wrote on the problem of the Eucharist at roughly the same time as *On transubstantiation* offer evidence that the substantial form of a substance contains the ontological correlate of the complete concept. He explains: “The substance of things is Idea. Idea is union of God and creature, just as an action is a unity [unum] of acting and suffering [agentis et patientis].” As Leibniz goes on to explain: “The Ideas of God and the Substances of things are the same thing, but different in relation.”⁸⁸ By such means, Leibniz can be seen to offer a succinct account of the role that the substantial form plays in God’s world. Given Leibniz’s commitment to the Principle of Substantial Activity, according to which S is a substance if and only if S has a principle of activity per se, the Idea under discussion here must be the Idea qua substantial form. Therefore, what Leibniz suggests in this text is that, although in its relation to God, the substantial form F is merely active, in its relation to its passive principle P, F constitutes a unity with P and in that sense suffers along with P. Since the Supreme Being can be presumed to know the contents of its Ideas, it follows that God has foreknowledge of all the predicates that will truly be ascribed to the unity (i.e., the substance) constituted of F and P. It would seem to follow therefore that the Idea or substantial form F in the substance S will contain instructions for how F will form a unity with P so as to fulfill its preconceived plan. That is, consistent with our Speculative Creation Story, these notes on the Eucharist suggest that the Idea qua substantial form contains instructions for how S will act so as to acquire all its divinely foreseen features.

Thus far in my account of Leibniz’s Emanative Creation Story, I have only considered texts that date from 1668–69 and that display Leibniz’s Original Theory of Corporeal Substance. But in *On the incarnation of God*, we also find evidence of the Emanative Creation Story. According to the account of substantial unity and activity that we discovered in that essay, for every corporeal substance S, S will have a (mind-like) substantial form F that contains the principle of activity of S and a set of instructions for the behavior of F on its passive principle P. As Leibniz insists, each mind has “a special *ratio*” by which it acts as “God’s instrument.” The relation between God and creatures, as it is displayed in *On the incarnation of God*, is consistent with parts (2) and (3) of the Emanative Creation Story.⁸⁹

88. VI i 513.

89. VI i 533–34. For a full discussion of these points, see ch. 4, sect. 3.

Nor is that all. In the December 1670 letter to Thomasius with which I began this chapter, Leibniz goes even further. He dramatically proclaims the need to return to final causes so that his contemporaries may be saved “from the darknesses” of materialism. In the remainder of the text, he makes two points that are particularly relevant here. First, he suggests that a more thorough contemplation of final causes will expose the underlying necessity of things. For Leibniz, the “clock of the world” unfolds “as if by necessity” toward the greatest good. This unfolding occurs because “the first mind . . . in its wisdom, establishes things from the beginning so that there is rarely need of extraordinary concurrence . . . for the conservation of things.” Leibniz goes on to explain how this works. As he writes to Thomasius, “thinking and motion” are “the efficient causes of all things.”⁹⁰ According to the Second Theory of Corporeal Substance, thinking and motion are the two sorts of activity in the world, both of which reduce to the activity of the mind-like substantial forms in corporeal substances which themselves act “by a special *ratio*.” Therefore, Leibniz’s point to Thomasius seems to be that the activities of substantial forms are the efficient causes of everything else, and moreover that these mind-like substantial forms are arranged from the beginning to act “as if by necessity.” In other words, all the states of the world reduce to the activities of substantial forms which are themselves prearranged from the beginning. But in this case, we have an account of substantial form that is consistent with part (3) of the Emanative Creation Story: the substantial form F of a substance S contains the ontological correlate of the complete concept of S in that every true predicate in the concept has a correlate in the set of instructions. Another point of special relevance to us here concerns part (4) of the speculative story and a point we made in discussion of Leibniz’s version of the Emanative Creation Story in *On transubstantiation*. I argued that in a world in which there are both complete concepts for substances and genuine causation among them, there will have to be (Weak) Parallelism. In the December 1670 letter, Leibniz recommends to Thomasius that he conceive of the interrelations among creatures in civil and not in material terms. Leibniz’s point seems to be that the substances in the world behave like the members of a “grand republic” in that each acts according to its place and in appropriate relation to all the others.⁹¹

In section 2, I noted Leibniz’s interesting application of the theory of traduction to the momentary minds in non-human substances, where the idea was that each momentary mind propagates itself through traduction; and I explained the relation between this theory and the Platonist Causal Seed Doctrine, according to which God created everything “in the beginning” as seminal *rationes* so that they would remain dormant until the appropriate time. I also analyzed a letter to Lambert van Velthuysen of May 1671 in which Leibniz insists that the mind in a body “multiplies itself through Traduction without new creation, with no loss of incorporeality [incorpo-

90. II i 73–74. 91. II i 73. For a brief account of parallelism, see Appendix I.

ralitatis].”⁹² In the letter to Johann Friedrich of May 1671 which we also discussed briefly in section 2 and in which Leibniz describes the relation between a mind and its body as one of diffusion, we find the same emphasis on traduction and the same moral to the story that Leibniz draws in his letter to Van Velthuysen: there is no need for the perpetual miracles of God because minds act “without being diminished.”⁹³ Leibniz’s use of the theory of traduction is relevant to our concerns here. According to his Second Theory of Corporeal Substance as articulated in chapter 4, the minds in unconscious substances are momentary. Traduction is critical in a world populated by momentary minds: without traduction, God would have to create minds constantly; with it, minds are, in the words of Augustine, “like mothers heavy with their offspring” in that they contain “the causes of things still to be.”⁹⁴ But traduction will only work if minds have two rather demanding characteristics. First, as noted, each mind must contain power sufficient to produce other minds without being depleted. Second, as Augustine suggests in his account of seminal *rationes*, God must have prearranged things so that every seed acts according to plan. That is, the proper functioning of traduction requires the careful prearranged coordination among substances, or something very like (Weak) Parallelism. Not surprisingly, in his letters to Van Velthuysen and Johann Friedrich, Leibniz’s basic point seems to be that all the activities in the natural world have been prearranged in minds, which not only act out of their own perpetual power, but reproduce themselves in a manner carefully prearranged by God. Similar to Augustine with his notion of seminal *rationes*, Leibniz suggests that God has scattered an infinity of causal seeds throughout creation which function as the source of all the activity in the world and which do so in a divinely harmonious fashion. The general idea seems to be that in the same way the (selected) divine essence flows from the Supreme Being in a perfect and orderly fashion, so do the activities of minds.

Before concluding this section, it will be worthwhile to turn to another letter of May 1671 that neatly outlines Leibniz’s version of the Emanative Creation Story. In a letter to Magnus Wedderkopf, Leibniz offers an important summary of some of his most basic beliefs. He explains that “it is necessary that everything be reduced [resolvi] to some *ratio*.” Nor should we stop until we have arrived at “the first *ratio*” or we must admit “that something is able to exist with sufficient *ratio* for its existence.” About this first *ratio*, he asks:

What is the ultimate *ratio* of the divine will? The divine intellect. For God wills those things which he understands to be best and harmonious and selects them, as it were, from the infinite number of all possibilities. What is the ultimate *ratio* of the divine intellect? The harmony of things. What is the *ratio* of the harmony of things? Nothing. For example, no *ratio* can be given for the relation of 2 to 4 being the same as that of 4 to 8, not even in the divine will. This depends on the Essence itself, or the

92. II i 97. 93. II i 113.

94. *On the Trinity*, III ix (16). For a more thorough discussion of this point, see sect. 7, ch. 5.

Idea of things. For the Essences of things are like numbers and contain the very possibility of Beings, which [possibility] God does not make, but he makes existence: since rather these possibilities themselves or the Ideas of things coincide with God himself.⁹⁵

Given our present concerns, what is striking about this passage is the poignant directness of Leibniz's views about creation. We will bypass the difficult details concerning the relation between the divine will and intellect and focus on the part of the creation story that most concerns us here. There are several significant points. First, the background assumption seems to be that for everything that happens, there is a complete *ratio*. Second, Leibniz insists that every such *ratio* can itself be reduced to a first *ratio* or God. A question arises: how exactly does God or the "first *ratio*" constitute the complete *ratio* for the secondary causes or minds? The short answer to the question is: harmony. For now, we will avoid the long answer except to note that this harmony coincides with the Supreme Being itself. But how? At this point, I call upon both the discussion (in chapter 5, section 4) of the relation between the transcendent and immanent God, and the account (in section 1 above) of Leibniz's views about Emanative Harmony. With this material in hand, the point here becomes fairly straightforward: "the very possibility of Beings" is contained in God who then makes this "Essence" or "Idea of things" immanent in the world. The harmony of things just is, following the terminology introduced here, the instantiation of the (selected) emanative essence of God. But our passage is more than just a very clear account of Emanative Harmony. Notice what follows. The essences of things, writes Leibniz, depend on "the Essence itself." Following our terminology, the point is that the complete concepts of individual substances are versions of the (selected) divine essence. Leibniz goes on to point out that these conceived essences or complete concepts contain "the very possibility of Beings" and that these possible beings are not strictly made by God. This is both an accurate description of the complete concepts, and is consistent with our account of Idea in *On transubstantiation*: God does not make the conceived essences in that they follow from the divine essence. That is, like the Idea qua conceived essence of *On transubstantiation*, the complete concepts are "in God" in the sense that they are versions of the divine essence that follow from it and in that sense are not produced. As Leibniz nicely makes the point here, they "coincide with God himself." Moreover, Leibniz compares these complete concepts to numbers, and implies that the actualization of these conceived essences is like the instantiation of such numbers in the world.⁹⁶ It is important that according to Leibniz here, the difference between the conceived essence and the instantiated essence is that although the Supreme Being does not make the former, it makes the latter. That is, like the Idea qua substantial form in *On transub-*

95. II i 117: L 146.

96. This is almost certainly Leibniz's first use of such an arithmetical analogy which will become prominent in his Paris period. See, e.g., VI iii 512, 518, 523.

stantiation, the ontological correlate of the complete concept requires an act of God. In short, the creation of an individual substance requires that God actualize or instantiate the complete concept. Finally, the passage suggests that the essence of an individual thing, like the essence of a number, will contain all those properties that are truly predicated of it. To put it another way, when the Supreme Being chooses to actualize the complete concept, it gives each substance the ontological correlate of the concept so that the substance will act to fulfill God's prearranged plan. In the same way that the properties of a number will follow from its essence, so will the properties of the actualized complete concept. After insisting to Wedderkopf that this account is perfectly consistent with the freedom of God, Leibniz declares: "Hence it follows that whatever has happened, is happening, or will happen is best, and also is necessary."⁹⁷

I do not think that we can avoid the surprising conclusion that the young Leibniz's Emanative Creation Story contains all five parts of the speculative story presented here. In 1668-early 1671, Leibniz was attempting to solve a number of problems at once. Some of his solutions place him in close proximity with key doctrines of his mature thought. At first glance, the fact that he had these radical philosophical leanings at such an early stage might seem shocking, especially since they have gone unnoticed. But as I suggested in the presentation of the Speculative Creation Story, when we combine the Aristotelian principles attributed to Leibniz in chapter 2 with the Platonist tenets articulated in chapter 5, and then add a commitment to divine foreknowledge, some of the more radical features of Leibniz's metaphysics are very close at hand. It is worth noting, however, that in the period 1668-early 1671, Leibniz was not yet prepared to embrace the Complete-*Ratio* Theory of Substance.

I said in chapter 1 that once we take seriously Leibniz's Metaphysics of Method, we will be able to discern a long-missed aspect of his brilliance. The present section contains a striking example of this. Leibniz's Emanative Creation Story is the result of a brilliant blending of materials from a diverse group of sources. What Leibniz does is to take an Aristotelian Metaphysics of Substance and Platonist Metaphysics of Divinity, apply them to a set of contemporary theological, physical, philosophical problems, and thereby create a fascinating Metaphysics of Divinity of his own.

On the basis of our discussion in this and the preceding section, we can revise the (1670) Substantial Form Assumption as it was articulated at the conclusion of chapter 4. Its final 1670 – early 1671 version runs as follows:

- The (early 1671) *Substantial Form Assumption* claims that, for every mind-like substantial form F in a substance S, F acts constantly on its passive principle P by a set of instructions given it by God and that constitute the ontological correlate of the complete concept of S, F creates a substantial unity with P by so acting, F is permanently attached to P so

97. II i 117: L 147.

that F will only act outside itself through P, the acting of F is a form of thinking that produces thoughts, and moreover F acts through emanation and therefore can neither be created nor destroyed by anything other than God.

4. Platonist epistemology

How do human minds fit into this world of Emanative Harmony? According to the Second Theory of Corporeal Substance, for each non-human substance, there is a mind-like form that contains a principle of activity and set of instructions. Whereas such minds unconsciously act according to this blueprint built into them, rational minds are conscious of the world and their position in it. As Leibniz writes in the *Conspectus*, “minds are free; bodies are necessary.” Each human mind is two things at once: it is both something that instantiates the (selected) essence of God and something that is conscious of other creaturely instantiations. In the period of 1669–71, Leibniz begins to investigate the exact role that conscious minds play in a world of Emanative Harmony.⁹⁸ In the present section, I will consider the texts of this period and outline the general features of Leibniz’s epistemology. In chapter 8, I argue that there is a subtle though important shift between early and late 1671 in Leibniz’s thinking about the role that sensory appearances play in the acquisition of knowledge. In brief, the shift consists in the fact that by late 1671, Leibniz is more concerned than he was earlier to explain the exact relation between our perceptions of the sensory appearances and our knowledge of the underlying realities. Prior to May 1671, he seems either unconcerned or undecided about the place of sensory appearances on the road to knowledge.

When Leibniz began to investigate the place of conscious minds in a world of Emanative Harmony, the results were significant. In his inquiry about the relation between human minds and their divine source, he analyzes how the former is able to contemplate the latter. Of crucial importance here is the fact that a human mind is capable of recognizing the unity between itself and other minds. For each conscious individual, the goal of life is to recognize the divinity within the world and the means to that recognition is through the unity among minds. In his exploration of the relation among conscious minds, Leibniz investigates how each individual mind is able to contribute to the epistemological journey of all the others. Of crucial significance here is the fact that each individual human mind is able to reflect all the others “like a mirror.”

In this section, I argue that Leibniz’s original epistemology is thoroughly Platonist. As I suggested in chapter 5, for most Platonists, the world is fundamentally good and is moving toward the good. Human beings love the

98. In this chapter, I have generally tried to appeal only to texts of the period 1668–70. Because some of the notes that are most explicit about Leibniz’s epistemology are dated 1670–71, the period covered in this section extends into 1671.

good and strive to be good. Doing good requires knowing what the good is and loving it. The true objects of knowledge are those immutable essences or Ideas (e.g., Justice) which are constitutive of the good and which can be known only by removing oneself from the mutable world of appearances. Many Platonists equated the Ideas with the divine attributes, so that to know the Ideas was to know God. For many, the Ideas exist in us, put there by God, as the only proper objects of knowledge; because of our finitude, the recognition of these Ideas requires God's help. For some, God's help comes in the form of love. According to Augustine, for example, the "immutable light of God . . . gave a shock to the weakness of my sight . . . , and I trembled with love and awe." He explains: "The person who knows the truth knows it, and he who knows it knows eternity. Love knows it."⁹⁹ In section 6 of chapter 5, we also described the journey to knowledge. For Platonists like Philo of Alexandria knowledge is attainable only for those who "quit the abode of the outward senses" and "dwell in mind and intellect . . . among the objects of contemplation."¹⁰⁰ According to Philo, as long as we waste our time with "the distinctive qualities of the body,"¹⁰¹ we will not "arrive at a correct knowledge of God and of his works." For Philo, one of the points to life is to recognize that "there is a mind in you and in the universe."¹⁰² In section 6 of chapter 5, I offered the Epistemological Assumption as a summary of this somewhat complicated Platonist theory of knowledge and knowledge acquisition: it claims (1) that the mind is the object of knowledge in the sense that it contains the eternal truths or Ideas, (2) that the mind, which is mutable and finite, will become aware of those objects only if it turns away from the material world and is aided by the divine light, and (3) that it is the intellect or understanding that is capable of grasping those truths. In the texts of 1668–71, we find ample evidence that Leibniz accepts this assumption. Let's consider each claim in turn.

Ideas as objects of knowledge

I asserted at the outset of this chapter that according to Leibniz, there are two aspects of the created world: the sensory or phenomenal world of becoming and the eternal and immutable world of being. For the young Leibniz, the acquisition of knowledge depends crucially on the fact that a human mind can turn itself upon itself and be both subject and object of knowledge. The mind as subject is capable of understanding all essences;¹⁰³ the mind as object contains them in its nature.¹⁰⁴ Let's consider some texts.

99. Augustine, *Confessions* VII, x (16). For Augustine and Leibniz, grace plays a role in the acquisition of knowledge, although Leibniz is less explicit than Augustine about its importance. The mature Leibniz is relatively clear about his views. See, e.g., *Discourse on metaphysics*, ch. 31; *Leibniz' Deutsche Schriften*, 412–13: L 368–69.

100. Philo, *On the Migration of Abraham* XXXVIII 214: Yonge 274.

101. *Ibid.*, V. 28: Yonge 255. 102. *Ibid.*, XXXIII 185–86: Yonge 271. 103. II i 113.

104. It is well-known that in the late 1660s and throughout his life, Leibniz was thoroughly

In notes written during the summer of 1669, Leibniz repudiates those who claim that “there is nothing in the intellect that is not first in the sense.” According to Leibniz, this is true only “in a limited way” for “there is nothing in the intellect that was not first in sense, *except the intellect itself*.”¹⁰⁵ In the discussion of the Active and Passive Intellects in section 3, I noted that for some philosophers (e.g., Averroës) the Intellect contains the Ideas. Leibniz concurs: for him, the Intellect comes replete with the Ideas, which are the true objects of knowledge. Therefore, when he writes that “there is nothing in the intellect that is not first in the sense, except the intellect itself,” he is claiming that the Intellect is able to have two sorts of objects: those Ideas that are contained in its nature and those sensory materials that are not. We find further evidence to this effect in Leibniz’s outline of the *Catholic demonstrations*. In the third section of the *Conspectus*, entitled “The Demonstration of the Possibility of the Mysteries of the Christian Faith,” Leibniz makes some revealing comments about the relation between divine and human mind. His plan is to discuss “the eternal” modes of God, namely, omniscience, omnipotence, omnipresence, and multipresence; to analyze the omnipresence and multipresence of God *in human mind*; and to include “an exposition of the Ideas,” insofar as they are in divine as well as human mind.¹⁰⁶ As noted in section 6 of chapter 5, it was common for Platonists to think that the divinity was present in the human mind and that the acquisition of knowledge required divine help. In Augustine’s words: “God is everywhere” and knowledge is attainable only “through the help of God.”¹⁰⁷ In the *Conspectus*, Leibniz agrees that God is present in mind, and endorses the claim that both human and divine mind contain the Ideas. Moreover, in the second part of this outline for the *Catholic demonstrations*, entitled “Demonstration of the Immortality of the Soul, and of Incorporeality,” Leibniz proposes to demonstrate immortality on the basis of “the thinking of incorporeals.”¹⁰⁸ In the *Phaedo*, Plato had argued for the immortality of the soul based on the fact that, like the incorporeal Ideas, the soul is an incorporeal thing. Roughly, one of Plato’s points was that only something that itself could escape the corporeal world of becoming would be capable of thinking or grasping the incorporeal world of the Ideas.¹⁰⁹ Following Plato, Leibniz seems to assume in the *Conspectus* that the capacity of the soul to think the eternal and immutable Ideas entails its immortality. For our purposes here, however, the point to emphasize is that in texts written in the period 1668–69, Leibniz endorses the first claim in the Epis-

interested in the examination of the physical world. How does his genuine enthusiasm for natural science conform to his Platonist epistemology? For the answer to this question, see chapter 8, section 3.

105. VI ii 393. My emphasis.

106. VI i 495. The *Conspectus* was written during the period when Leibniz believed that the mind in non-human substances was the “concurrent mind” or God. Therefore, the minds under discussion here must be human.

107. *Confessions*, XIV.xv (21). 108. VI i 495. The Latin is: “ex cognitione incorporaliūm.”

109. *Phaedo*, 78b–84b.

temological Assumption, namely, that the mind is the object of knowledge in that it contains the immutable and incorporeal Ideas.

Intellect and the material world

In the notes for the *Elements of natural law* and in other texts of 1670-early 1671, Leibniz proudly proclaims that his theory of knowledge is Platonist. He insists that the acquisition of knowledge ultimately demands that we turn away from the material world so that our intellect can grasp the truths. He distinguishes clearly between the senses and the intellect and between the sciences based on them. According to Leibniz, there are two sorts of sciences: those “which depend on experience . . . and sense” and “those sciences which depend on definitions . . . and demonstrations.”¹¹⁰ Although he encourages work in the former (e.g., medicine) and admits that such disciplines have made progress in controlling nature, he insists that this sort of science does not benefit our souls. For Leibniz, despite the genuine usefulness of the mechanical sciences based on the phenomena, they do not lead us to the real underlying truths: “Therefore until now we have been ignorant of, that is we have not consumed, nor have we imbibed the true fountains of the equal and the good.”¹¹¹ He writes: “Now that we are conquerors of the world, there assuredly remains an enemy within us: everything is clear to man but man, the body to the mind, and *the mind to itself*.”¹¹² Our souls will be benefited only when we turn away from the senses and discover the real truths that lie beyond them. According to Leibniz, unlike those sciences that are based on the sensory phenomena, “the principles of the [other] sciences possess eternal truth” and are based on the understanding. These principles are like “what Plato called an Idea.”¹¹³ In sum, the true objects of knowledge are the Platonist Ideas which the understanding grasps and which cannot be reached through the senses. In the introductory paragraph of the *Theory of Abstract Motion*, Leibniz makes the same sort of pronouncements about the relation between physics and true knowledge. He explains that his physical proposals are ultimately based on “the innermost nature of Thinking, the perpetuity [perennitas] of Mind, and the First Cause. . . . [F]rom these fountains, both clear and limpid, flow forth profound truths . . . about the Good and the Equal, and the Just.”¹¹⁴ In his conclusion, he returns to this theme and insists that the goal of his work in physics is “to offer solid demonstrations about God and Mind” and to affirm “the mysteries of the faith.” He proclaims that his physical proposals

110. VI i 460: L 133.

111. VI i 460: L 132. In Plato's *Phaedo*, the discussion of the Ideas and the possession of knowledge of them begins with a set of questions about the Equal (see especially 74a-75d). In the *Republic* (esp. 508b-511), where the discussion is focused primarily on Justice, Plato suggests that the Good is the ultimate Idea. See the quotation, cited in n. 114, in which Leibniz mentions these three Ideas.

112. VI i 459: L 132; my emphasis. 113. VI i 460: L 133. 114. VI ii 262.

are founded on “a certain singular harmony of things detectable to those minds accustomed to such Music.”¹¹⁵

Soon after writing the *Theory of Abstract Motion*, Leibniz began to work on the details of how minds could become so accustomed. In a fascinating note of 1671, entitled *Trinity, Mind*, we see him tinkering with the details of his views. The abundant additions and deletions made to the manuscript offer a ringside seat on a struggle among formulations. Leibniz’s first attempt to articulate a basic tenet of his epistemology, namely, that “Mind is what perceives eternal [truths],” became “Mind is what is concerned with eternal truths,” which he also crossed out.¹¹⁶ He tried again, and wrote and then crossed out both of the following: “The Intellect is what concerns itself with the eternal truths;” “The Intellect is what concerns itself with the perception of things which are in act.” These rejected formulations reveal that in one of his original attempts to display how the mind acquires knowledge, Leibniz turned to the model of the Agent Intellect. As noted previously, for some philosophers this faculty is both the subject and the object of knowledge: as subject, it is the faculty that receives the objects of knowledge; as object, it is a storehouse of the eternal truths. According to Leibniz, the eternal truths are in the mind as possible objects of knowledge. He writes in *Trinity, Mind*: “For if God did not think [cogitaret] himself to be in act, then . . . he would neither perceive [perciperet] nor have happiness.” That is, because God is the only thing that, as an object of thought, could make himself happy, it follows that if he were not able to be his own object of thought, then he would have no happiness. The Supreme Being must therefore be its own object of thought. Leibniz continues: “So, it is not able to be otherwise than that God thinks himself to be in act, and that mind thinks itself to be in act. Mind and God do not differ except that one is finite and the other infinite.”¹¹⁷ In other words, finite conscious mind is like God in that it is able to have itself as an object of thought. According to Leibniz, when mind reflects upon itself, it contemplates the same objects as does God, namely, the eternal truths. These objects are non-sensory and follow from the nature of human mind in much the same way that they follow from the nature of divine mind.

In chapter 8, I will explore a slight shift between early and late 1671 in Leibniz’s thinking about the epistemological value of sensory appearances. The important point for us now is that for Leibniz in 1668–early 1671, each mind is an Intellect with its own storehouse of eternal truths or Ideas which are non-sensory.

115. VI ii 274.

116. VI ii 287. Leibniz did not finish writing the first formulation before he began the second. He wrote *Mens* and then *quae percipit aetern* (sic), which he crossed out before writing *refertur ad aeternas veritates*.

117. VI ii 288.

Divine light

But if the Ideas are in our mind and non-sensory, then how do we attain access to them? In chapter 8, section 3, I will discuss the precise role that the sensory appearances play in the acquisition of knowledge. For now let's restrict ourselves to a discussion of how the divine light helps us attain knowledge. Given the Platonist epistemological goal, it would be reasonable to predict that the journey to it would be an individual and internal one, aided only by God. In fact, the journey importantly depends on the vast interconnections among divinely harmonized creatures, and in that sense is importantly aided from without. In section 1, I discussed Reflective Harmony and presented Leibniz's original comparison of the mind to a mirror. In the ethical context of the *Elements of natural law*, the poignancy of the image would have been clear to Leibniz's contemporaries. Mirrors in the seventeenth century were both darker and more obscure than their modern versions, and must have differed widely in quality.¹¹⁸ In one of the passages in which Leibniz uses the analogy, he mentions "the deformity of mind."¹¹⁹ It seems likely that he was motivated to develop this analogy in order to display the important role of Reflective Harmony in the acquisition of knowledge by finite, mutable minds. Let me explain.

Over the months that Leibniz composed the various notes of the *Elements of natural law*, his views about ethical matters evolve in interesting ways. But underlying these changes are the assumptions that all creatures, despite their "deformity," contain goodness and that rational creatures can (at least in theory) come to see both the goodness in each thing and the goodness in everything. To oversimplify somewhat, by the autumn of 1671, Leibniz concludes that human beings will become good just in case they recognize the divinity in things and therefore love them. According to Leibniz, "the Good" has been attained "when harmony is understood thoroughly."¹²⁰ Moreover, "a *Good Man* is one who loves everyone."¹²¹ For Leibniz, then, in order to become good, one must acquire knowledge of the good; to acquire knowledge of the good is just to recognize the unity within the multiplicity or (what amounts to the same thing) to perceive the divinity and goodness in everything and hence to love everything.¹²² In brief, to know the good is to understand Emanative Harmony: "It is obvious that everyone would love everyone, . . . (if only) we were to elevate our eyes to universal harmony."¹²³

So far, so good. But how exactly does one come to understand Emanative Harmony? Leibniz's answer to this question places him in a long line of Platonists. Consider the following passage from Plotinus' *Enneads*, which we

118. Loemker makes this point at L 138, n. 9. 119. VI i 464; L 137.

120. VI i 478. 121. VI ii 485.

122. For an excellent discussion of Leibniz's views about love and related matters, see Riley, *Leibniz' Universal Jurisprudence*, passim.

123. VI i 481.

considered briefly in section 5 of chapter 5. About the interrelations among the mind-like Ideas, Plotinus writes:

Everything is clear . . . to everything, for light is transparent to light. Each, there, has everything in itself and sees all things in every other, for all are everywhere and each and every one is all, and the *glory* is unbounded; for each of them is great, because even the small is great: the sun there is all the stars, and each star is the sun and all the others.¹²⁴

As noted in chapter 5, there exists a similar reflective interrelation among individual souls, although they are not fully conscious of it. For Plotinus and many other Platonists, a necessary step to knowledge of the One is the recognition of the unity or oneness among individual souls. That is, for each individual soul, its first step toward an understanding of the unity and divinity in all things is the recognition of the unity among souls. Or, to make the point another way, the journey to knowledge for the individual soul will begin with a recognition of its connection to all other souls.

In the *Republic*, Plato compares the Good to the sun which sheds its light on every other being.¹²⁵ For Plotinus and others, the metaphor of the sun as a source of goodness and being was put to a variety of uses. With his image of a mind as a mirror, Leibniz cleverly picks up and extends the standard Platonist metaphor of God as a sun emitting rays. He combines the ancient image with elements from contemporary science to produce a vivid picture of the divine light within nature. As noted in section 1, Leibniz's first use of the metaphor suggests that the reflection and refraction of light adds to the beauty and goodness of things. According to Leibniz, a mind is like a "point collecting visual rays." But there is more going on than just that. For Leibniz's contemporaries, the role that mirrors played in microscopes and telescopes was well known. Since both of these instruments used mirrors to extend the human capacity to see, Leibniz surely intends for his analogy to suggest that the Reflective Harmony among minds increases the capacity of each moral being to see the good. That is, because of the Reflective Harmony among minds, each mind will be more enlightened and the good will be more visible. As Leibniz makes the point in a passage quoted in section 1:

since every mind is like a mirror, there will be one mirror in our mind, another in other minds. Thus, if there are many mirrors, that is, many minds recognizing our goods, there will be a greater light, the mirrors blending the light not only in the [individual] eye but also among each other. The gathered splendor produces *glory*.¹²⁶

In this passage, which bears a resemblance to the one just quoted from the *Enneads*, each mind reflects the goodness of the others and thereby increases the capacity of each to see the good. In section 1, we noted the place of the Enhancement Relation in Leibniz conception of Reflective Harmony. The

124. V.8. 31 4, 5–10; my emphasis. 125. *Republic* 508b–509b; 518c.

126. VI i 464: L 137. My emphasis. Unfortunately, the precise date of Leibniz's text is not known; it was written sometime in 1670–71.

important point to emphasize about the relation here is that it guarantees that minds will increase the goodness and not the badness of one another. That is, Leibniz's *Metaphysics of Divinity* requires that minds be related so that their goodness can only increase. The image of the mind as a mirror is perfectly suited to the point: in the same way that the reflection of mirrors increase light, so does the reflection of minds increase goodness. For Leibniz, the divine light inherent in the world aids in the journey of the individual soul to the truth. Because of the unity among minds, and because goodness begets goodness, humans can escape the material world of becoming and grasp the unity within the world and within themselves. In Philo's words, "there is a mind in you and in the universe."¹²⁷ As Leibniz suggests in the letter to Thomasius with which I began this chapter, "God has arranged things from the beginning" so that individual souls might recognize "the greatest harmony of all things."¹²⁸ For Leibniz, God offers each human mind help in its journey by placing each mind in Reflective Harmony with all the others. Since each being is an instantiation of the (selected) divine essence and since all human beings reflect all the others, God has constructed the world so as to aid each mind in the epistemological journey to the Ideas.

I began chapter 5 with a discussion of the 219 Aristotelian statements condemned in Paris in 1277. For the authors of this condemnation, it was of crucial importance to insist that knowledge could be attained only with the help of the divine light and that the ultimate object of knowledge be God. In this section, I have suggested that the young Leibniz shared this epistemological vision.

5. Leibniz's original Platonism

In Chapter 5, I offered a summary of a number of Platonist doctrines which, it was claimed, constitute the materials out of which Leibniz developed his *Metaphysics of Divinity*. As suggested there, much that is interesting in Leibniz's early writings has gone unnoticed due to our ignorance of the vastness and variety of Platonism in the seventeenth century. In this chapter, I have placed some of Leibniz's early texts against the background set in chapter 5. The results are startling. Among the ten assumptions articulated in chapter 5, we have unearthed nine in Leibniz's early writings. That is, with varying degrees of clarity, we have discerned in texts and essays written between 1668 and early 1671, the Supreme Being Assumption, the Doctrine of the Hierarchy of Being, the Principle of Harmonized Plenitude, the Enhancement Relation, the Theory of Emanative Causation, the Theory of Reflective Harmony, the Creaturely Inferiority Complex, the Causal Seed Doctrine, and the Epistemological Assumption.¹²⁹

127. Philo, *On the Migration of Abraham*, XXXIII 185–86: Yonge 271.

128. II i 73–74. 129. The one missing assumption is the Relation of Sympathy.

In this chapter, the primary focus has been on Leibniz's original views about knowledge, harmony, and the role of mind in such a world. I have suggested that Leibniz's notion of universal harmony has not been properly understood because its Platonist roots have not been recognized, and I have claimed that when Leibniz characterizes the harmony in the world as unity or identity compensated by multiplicity or diversity, he is asserting that God is both the unity and the multiplicity in the world. Besides his notion of harmony, I have also claimed that Leibniz's Platonist predecessors bequeathed to him assumptions about the divinity of mind and the means to knowledge.

Nor does Leibniz waver from these fundamental Platonist commitments. Although there is abundant evidence of his Platonist doctrines scattered throughout the mature writings, he is rarely as explicit about their interconnections as he is in *On the true mystical theology*. In this text, written in German (probably) in the final years of the seventeenth century, Leibniz places his Platonist cards on the table. In fact, he is explicit about each of the major claims of the present chapter. Concerning the main focus of sections 1 and 3, namely, the emanative relation between God and creatures and the Emanative Creation Story, he asserts in *On the true mystical theology*: "Every perfection flows . . . from God, as essence, power, existence, spirit, knowledge, will. . . . The divine perfections are concealed in all things, though very few know how to discover them there."¹³⁰ Although Leibniz does not discuss the notion of a complete concept, he is explicit about the fact that God creates the world so that each individual substance contains "everything" through its direct relation to God and yet that each substance differs from the others. He writes: "there is a diversity of [those] things which belong directly to the one being and are, as it were, embodied in it. . . . In each and every being there is everything – but with a certain degree of clearness."¹³¹ Concerning section 2 and our point about the unity and divinity of mind, Leibniz is particularly eloquent in *On the true mystical theology*. He announces: "Within our self-state [Selbststand] there lies an infinity, a footprint or reflection of the omniscience and omnipresence of God. . . . Every single self-state, such as I or you, is a unified, indivisible, indestructable thing. . . . God belongs to me more intimately than does my body."¹³² Concerning the claims of section 4, Leibniz is also unusually forthcoming in this essay about the human soul and its journey to knowledge. Employing the same metaphor that he used in the December 1670 letter to Thomasius, Leibniz says that the mind must turn away from "the shadows" and seek God. He warns in *On the true mystical theology* that although there is some knowledge that "belongs to this shadow way," we must eventually turn away from our interest in history, language, and nature to find our way to God who is both "the easiest and the hardest being to know." Leibniz writes:

130. *Leibniz' Deutsche Schriften* vol. I 410: L 367.

131. *Ibid.* 410–11: L 367.

132. *Ibid.* 411–12: L 368.

Only the inner light that God himself kindles in us has the power to give us the right knowledge of God. . . . Hence there are many who are learned without being illumined . . . This light does not come from without, although external teaching can, and sometimes must, give us an opportunity to get a glimpse of it. Among the external teachers there are two which best awaken the inner light: the Holy Scriptures and the experience of nature. But neither of these helps us if the inner light does not work with them. (The knowledge of God is the beginning of wisdom, and the divine attributes are the primary truths for the right order of knowledge.) The essential light is the eternal Word of God, in which is all wisdom, all light, indeed the origin of all beings and the origin of all truth.¹³³

In conclusion, I would like to draw attention to the philosophical proximity between Leibniz's original *Metaphysics of Substance* and the tenets of his mature thought. The writings of 1668-early 1671 suggest that Leibniz is on the verge of developing some of the central doctrines of his mature philosophy. We have found evidence of the indestructibility of minds, the notion of a complete concept, the conception of a mind as a mirror, and a commitment to the *per se* unity and activity of substance. Nor is that all. We have also glimpsed a tendency to think, as Leibniz wrote to Thomasius in the December 1670 letter with which I began this chapter, that substances are "arranged . . . from the beginning" so that "all things follow as if by a certain necessity toward the greatest harmony."¹³⁴ Therefore, it does not seem farfetched to say that when Leibniz wrote to Thomasius in the final month of 1670 and argued energetically for a return to final causes and an escape "from the shadows" of material causes, he was on the threshold of his mature thought. Let's now consider the next stage in its development.

133. *Ibid.*

134. II i 73.

Part four
Metaphysics

Matter, passivity, and panorganic vitalism, 1670–71

In November 1671, Leibniz wrote his first letter to the great Antoine Arnauld. While the correspondence between Leibniz and Arnauld that dates from the 1680s is surely one of the most fascinating philosophical exchanges in seventeenth-century philosophy, it is not entirely surprising that Arnauld did not respond to our young German's first attempt at communication. The letter of 1671 is long, tedious, and obscure. But the very features that probably repelled Arnauld make the letter enormously significant for us. It stands as elaborate proof of Leibniz's genuine and persistent concern with theological issues. It also presents one of the reasons that the young man had in the months before his departure for Paris to deny the reality of passive matter.

In this chapter, I turn to Leibniz's early views about matter and passivity. Between 1663 and 1668, Leibniz believed that there was primary passive matter, what I called body qua matter in chapters 2, 3 and 4. He conceived the contribution that primary matter makes to a corporeal substance in terms consistent with his understanding of the Aristotelian philosophy: body qua matter has a nature or essence – roughly, extended inert stuff – that is organized by the substantial form or active principle so as to constitute the nature of a corporeal substance. In the *Metaphysical Disputation on the Principle of Individuation* of 1663 and for at least a few years later, Leibniz took every corporeal thing in the world to result from the organization of such extended inert stuff by an active principle.¹

Twentieth-century scholars have generally been in agreement that, by the time of the *Monadology* of 1714, the created world for Leibniz is constituted entirely of unextended mind-like monads. From Arthur Hannequin in 1908 to Benson Mates in 1986, most historians assumed that when Leibniz began to construct his own philosophical ideas, they were based on a version of mental monism.² This scholarly consensus ended, however, with the ground-breaking work of Daniel Garber, who argued in 1985 that Leibniz promulgated a version of corporeal substance in the 1680s in which the passive principle is constituted (roughly) of extended force. Since the publication of Garber's seminal article, there has been a raging debate about the

1. For the most complete account of this earliest work by Leibniz and for other literature, see Lawrence B. McCollough, *Leibniz on Individuals and Individuation*, chs. 1–4.
2. Besides Hannequin and Mates, also see Brown, *Leibniz*; Rescher, *Leibniz, An Introduction*; Aiton, *Leibniz*; Mahnke, *Leibnizens Synthesen*; Belaval, *Initiation*.

role of extension in Leibniz's metaphysics.³ Robert Sleight and Robert Adams have argued against Garber's account and maintained that the monadological view is already in place in the 1680s.⁴ Catherine Wilson has ingeniously maintained that Leibniz has three "semi-systems" during the period, one of which assumes the reality of extension, one of which does not. Donald Rutherford and Glenn Hartz have energetically defended opposite views about body, somewhat in reaction to Wilson.⁵ In one of the few books on Leibniz's early philosophy, Philip Beeley has concluded that the young Leibniz is committed to the real extension of matter and that his mental monism must have developed later.⁶

In this chapter, I argue for a three-part conclusion. I claim (1) that in the autumn of 1670, Leibniz decided to reject the reality of matter, where the latter is taken to be the extended inert stuff that the active principle in a corporeal substance organizes into the nature of a substance, (2) that by the winter of 1670–71, he transformed the passive principle in corporeal substance into a collection of mind-like substances, and (3) that during the winter of 1670–71, Leibniz invented panorganism, according to which the passive principle in a corporeal substance is constituted of a vast collection of corporeal substances, each one of which is itself a corporeal substance whose passive principle is so constituted, and so on *in infinitum*.⁷

The argument for this conclusion is elaborate. Once again, it depends crucially on some historical facts. Besides the Aristotelian and Platonist as-

3. Garber neatly summarizes his position in the following way: "if Leibniz believes in the reality of corporeal substance . . . , then he is admitting something into his world that is extended in a way that minds, souls, or monads are not. But that is not to say that corporeal substances are extended in the deepest sense. Leibniz can certainly hold . . . that what is basic in body is force, and that extension is ultimately to be understood in terms of the forces bodies have. In particular, Leibniz seems to hold that extension results from the primitive passive force that excludes the penetration of one body by another. On this view, an extended body can be regarded as the diffusion of the force of impenetrability that defines a region that is the space occupied by a given body." See Garber, "Review: *Leibniz's Metaphysics: A Historical and Comparative Study* by Catherine Wilson; *Leibniz and Arnauld: A Commentary on their Correspondence* by Robert C. Sleight, Jr.," 53–54.
4. Sleight, *Leibniz and Arnauld: A Commentary on their Correspondence*, esp. chs. 5–7, *passim*; Adams, *Leibniz*, Part III, *passim*. Also, see Brown, *Leibniz*, Part 3, esp. 103–06.
5. Wilson, *Leibniz's Metaphysics*, esp. ch. 3. Also see Robinet, *Architectonique disjonctive*, *passim*; Rutherford, *Rational Order*, Part III and "Phenomenalism and the Reality of Body in Leibniz's Later Philosophy;" Hartz, "Leibniz's Phenomenalisms," "Exactly how are Leibnizian Substances related to Extension," and "Why Corporeal Substances Keep Popping Up in Leibniz's Later Philosophy."
6. Beeley, *Kontinuität*, *passim*.
7. I want to make it clear that Leibniz does not use the term "organism" in these early texts. He mostly describes these panorganic collections as "worlds within worlds." I have felt justified in importing the later terminology into these early texts for two reasons. First, Leibniz does seem to conceive of each of these subordinate substances as a creature; second, since this view is virtually the same as the later position, it seems appropriate to streamline things and apply the same terminology here. As Justin Smith has pointed out to me, Leibniz does not use the term 'organism' until 1704. For a discussion of these and other matters, see Smith, *Leibniz, Microscopy, and the Metaphysics of Composite Substance*, *passim*.

sumptions articulated in previous chapters, the facts here include some of the problems that surround the notion of matter in the seventeenth century as well as details about the theological issues that continued to interest the young Leibniz. The clearer we become about these problems, the easier it will be to motivate and explicate the transformation of his views. It is during the period 1669–71 that Leibniz first faces the full force of the difficulties concerning material passivity and conceives his solution. As I argue here, he first recognizes the inconsistencies between his views about primary matter on the one hand and his Aristotelian and Platonist assumptions on the other. Then, after briefly tinkering with the details of his original account, he decides that the account of matter as the extended inert principle in nature is fundamentally incoherent, and he quickly hits upon the basic outline of his solution which depends importantly on a reinterpretation of ancient notions of *pneuma* or World Soul. In the sections that follow, I analyze each of these steps in turn. Section 1 contains an account of the problems that forced Leibniz to reconsider his views about the passive principle in nature. Section 2 outlines the steps that he took in his effort to construct a coherent account of material passivity and then displays the reasons behind the ultimate failure of this attempt. Section 3 presents his new account of passivity in terms of a universal vitality or World Soul that is organized into panorganic arrangements of vital beings, and it argues that his new account of passivity solves the problems that confronted his earlier view. Section 4 offers further evidence to the conclusion that by the winter of 1670–71 Leibniz was prepared to transform the passive principle in nature into panorganic collections of vital substances.

1. Material difficulties

In all of his investigations concerning passive inert matter during the 1660s, Leibniz was haunted by two ghosts.⁸ One is the well-known problem of the continuum; the other, though ignored by scholars, is a set of problems that he inherited from his teachers and that concerns the brute passivity of matter and its place on the hierarchy of being. I summarized some of the latter difficulties in section 7 of chapter 5. Although the problem of the continuum and the problem of passivity are related, they play different roles in the evolution of Leibniz's theories about the passive principle in nature. In my discussion here, I would like to avoid the labyrinth of the continuum as much as possible. There are two reasons for doing so. First, the problem of the continuum is indeed labyrinthine and like the labyrinth of free-will, ought to be avoided at all costs. Since there are some recent helpful studies of the role of the problem in Leibniz's thought, it seems unnecessary to re-

8. In all my investigations concerning Leibniz's views about matter, I have benefited greatly from the advice given by Justin Smith and Richard Arthur. Besides reading drafts of this chapter, they have helped me to understand some of these difficult topics much more thoroughly than I otherwise would have done.

produce the issues and difficulties here. Second, I do not think that the continuum problem was a major motivation behind Leibniz's revision of his theory of passivity. As I will argue here, the transformation that occurred in Leibniz's thinking in 1670–71 about the passive principle in corporeal substance was primarily due to his realization that passivity was incompatible with his Aristotelian and Platonist assumptions. Although there were a number of questions that clustered around the notion of matter in the late 1660s and early 1670s, the one that most beleaguered the young Leibniz was how to make a passive principle consistent with the goodness of the world and the causal self-sufficiency of substances.

Before considering the exact difficulties that Leibniz came to see with his previous notion of matter, let's remind ourselves of why there has to be a passive or limiting principle in created substance. In fact, the passive principle in corporeal substance has two demanding jobs. Its primary duty is to root the substance in the world of becoming. Many theists used the Doctrine of the Hierarchy of Being to argue that angels and human souls reside among the highest strata of created being. For others, because souls were divine-like or even part of the divine, it was necessary for the body or passive principle in nature to limit the creature in the appropriate fashion. For many thinkers, it was the body or limiting principle that situated the creature in the world of change. In section 2, chapter 6, I provided evidence that the young Leibniz models minds and their activities on God. In this chapter, we will see other evidence to this effect, where the idea is that minds are divine-like while the bodies to which they are related are in constant flux. The second job of the passive principle is closely related to the first. Whereas the active principle, according to Leibniz, is what acts constantly out of its own nature, the passive principle is what receives or "suffers." As Leibniz makes clear, the passive principle must be capable of receiving the impressions or actions of others.⁹ For Leibniz, there has to be a passive principle in corporeal substance that can suffer in the right way. Mere active principles by themselves would not suffice.

In chapter 1, I claimed that in the mid-1660s, Leibniz was committed to mechanical explanations in physics and was busily trying out some of the prominent mechanical options. In 1668–69, as he began to explore the various implications of his Aristotelian assumptions, serious questions arose about how to understand passivity. That the youthful Leibniz was painfully aware of the many difficulties surrounding the concept of matter as the passive principle in nature is clear. For example, he proclaims in some notes of 1668 that the notion is so problematic that it is not clear whether or not anything coherent can be said about it.¹⁰ Leibniz's difficulty in the late 1660s concerning matter and passivity can be summarized as follows: in keeping

9. See II i 145. The Latin verb that Leibniz uses is *pati*. It is not until late in 1671 that Leibniz gives a full account of how his new conception of passivity explains the suffering and passions of substances. I discuss this topic in ch. 9.

10. VI i 502.

with the (1670) Passive Principle Assumption, he believed that every created mind or substantial form is permanently attached to a passive principle. Because he was in full agreement with the new mechanical physics according to which all the features of body are to be explained in terms of the movement of its parts, he was motivated to piece together a proper account of passivity from the mechanical proposals. But, at the same time, he was becoming increasingly convinced that all such accounts were incoherent and that his own previous proposals were inadequate.

What exactly were the problems that convinced Leibniz to transform his account of passivity? There were several related difficulties. Some of these strongly encouraged him to rethink his conception of passivity in 1670–71. Let's first consider the most influential problems. In order to understand Leibniz's increasing disapprobation of the place of material passivity in nature, it will be helpful to distinguish two versions of the same basic problem which, for the sake of clarity, I will call the *Passivity Problem*. Although each version of the Passivity Problem fundamentally concerns the question of how something unified, active, and good can have something divisible, inactive, and morally neutral as a constituent, the details of the problems are different, and each elicits a slightly different response from Leibniz. However, at the heart of each version of the Passivity Problem is the idea that pure passivity cannot contribute anything positive either to the world in which it exists or to the substance of which it is a constituent.

The first of these problems concerns how passivity is supposed to contribute to the variety and goodness of the world. According to the Principle of Harmonized Plenitude, the goodness of the world is partly a function of the variety of the beings within it, partly a function of the sum of the goodness of the beings within it, and partly a function of the order among those beings where the latter is understood primarily in terms of the Enhancement Relation among beings. Moreover, according to the latter, for every being S that has an Enhancement Relation to a being R, the relation of S to R is such that an increase in the goodness of S will promote an increase in R which is non-reciprocal (that is, the increase in R will not then promote an increase in S). It is striking that purely passive matter is incapable of contributing to the goodness of the world in any of the ways noted here: it can have neither variety nor goodness nor order per se. For the sake of easy reference, let's call this the *Plenitude Problem*.

The second Passivity Problem concerns how the passive principle is supposed to contribute anything positive to the reality, unity, or nature of a corporeal substance. Given Leibniz's Aristotelian assumptions, it is not surprising that he would explore exactly how material passivity contributes to the nature of a corporeal substance. In section 7 of chapter 5, I surveyed some of the difficulties that the concept of matter had posed for the Platonists. As I explained, the notion of matter as divisible and passive does not sit well with one of the claims in the Supreme Being Assumption, namely, that each of the features of unity, self-sufficiency, perfection, and reality is a function of the other. Moreover, the Doctrine of

the Hierarchy of Being claims that matter, which is the lowest stratum of the hierarchy, lacks all power and causal efficacy. Following this assumption, many Platonists found it very difficult to explain the apparent causal interaction between the mind and the body in a corporeal substance, and many thought it reasonable to ask whether or not matter can be said to have any being at all. I also noted in section 8 of chapter 5 that Thomasius worried intensely about exactly these questions: his texts contain lengthy discussions about the sundry problems confronting the notion. That Leibniz inherited deep suspicions about the ontological status of matter from Thomasius and others is clear. In the *Specimen of Collected Philosophical Questions Concerning Law* of 1664, Leibniz neatly summarizes the traditional Platonic distinction between being and becoming. As he contends, it was Plato's view in the *Timaeus* that "because of the continuous flux [continuum fluxum] of things, nothing is a this, nothing is a that, but everything must be called a kind of this or a kind of that." Leibniz goes on to insist that only the Ideas are permanent.¹¹ Matter is never a this or that because it lacks permanence, reality, and unity. It is important to be perfectly clear about this problem, which I will call the *Reality Problem*. The difficulty is that, insofar as brute passive stuff has nothing positive or real in its nature, it seems to have nothing to contribute to the unity, reality, or nature of anything else. For Leibniz in the 1660s, this was a particularly grave problem since he had committed himself to the mechanical physics, according to which matter was supposed to constitute and explain the nature of corporeal objects.

Besides the Passivity Problem, the young Leibniz was very concerned to solve the various difficulties that clustered around the problem of the continuum. The problem, which plagued Leibniz for years, concerns how a continuous whole is to be constituted. The difficulty applied with equal force to any continuous whole, whether time, space, or motion. One of the aspects of the problem that most interested him in our period was the *Problem of Cohesion*, namely, how divisible extended material stuff hangs together to form a single thing. Although this difficulty looks a bit like the Reality Problem – and Leibniz sometimes discusses the two together – it is not the same problem. The Reality Problem arises in the context of specific Platonist assumptions about reality and being, whereas the problem of continuity in general and of cohesion in particular concerns how a number of things of the same sort (say, bits of matter) constitute a continuous whole. One way of making clear the difference between the two problems in the evolution of Leibniz's views about passivity is that, as we will see, for an extended period in 1670, Leibniz was satisfied with a solution that he had developed to the Problem of Cohesion and yet at the very same time was enormously concerned with the Reality Problem. In a sense, the former difficulty is primarily a physical one; the latter is essentially a metaphysical one that encompasses Leibniz's deepest assumptions about being and reality, where the point is that unity and reality

11. VI i 90. I capitalize all the words in the title of published texts, but only the first word in the title of unpublished ones. See xiii.

can only arise from something divine-like. Once we distinguish clearly between these problems, it becomes clear that the former played a relatively minor role in the development of Leibniz's views about the passive principle in nature. Recent scholars have overestimated the importance of the problem of the continuum in the development of Leibniz's metaphysics because of a failure to distinguish among these problems.¹²

The final problem concerning the passive principle in corporeal substance that interested Leibniz is what I will call the *Metaphysical Problem of Cohesion*, where the concern is with the relation between the active and passive principles in corporeal substance. Here the question is: how do these principles interact so as to produce a single, unified, and active nature? The (1670) Substantial Form Assumption offers an answer to this question in terms of activity: the unity depends on the constant activity of the active principle on the passive one. However, as Leibniz began to re-think his views about passivity in 1670–71, he was forced to reconsider the source of this unity. Despite the fundamental role that the solution to this problem played in Leibniz's conception of substance, the problem had no direct bearing on the development of his theory of matter. I therefore postpone discussion of this topic until the analysis of substance in the next chapter.

2. Material progress

When Leibniz left the Rosental woods in 1663, he had chosen the mechanical over the scholastic model for physical explanations. As I argued in chapter 1, one of his projects during the mid-1660s was to develop an account of extended matter that could act as the foundation for that physics. For Leibniz at the time, there were two general options about how to conceive of the principle: it could be entirely passive or only partly so. Each option generated grave problems and clever responses. Although in the period 1668–69 the details of his account of matter changed, Leibniz remained committed to the existence of primary matter as extended and impenetrable passive stuff. In other words, body qua matter had an essence and nature distinct from the organization that it obtained from its active principle. The idea was that the active principle took this material stuff and created an organized nature with it, and moreover that the matter contributed its corporeal features to the substantial nature. For example, in both the *Confession of nature against the atheists* and *On transubstantiation* of 1668, prime matter is defined as “a being in space” that is accordingly impenetrable,¹³

12. Recent scholars like Beeley and Arthur have claimed that Leibniz's attempt to solve the problem of the continuum strongly influenced the development of his metaphysics. I think that these careful commentators have overemphasized the importance of the problem because they have not distinguished clearly between it and the Passivity Problem. See Beeley, *Kontinuität*, passim; and Arthur, *Labyrinth*, Introduction. In his *Leibniz*, Brown recognizes a part of the problem. See esp. 103–04.
13. VI i 493, 508; L 113, 115.

while in the October 1668 letter to Thomasius, it is “inert mass [moles],” and in the letter to Thomasius of 1669, it is “something solid and impenetrable.”¹⁴ At the very time that Leibniz was making such assertions, he was developing his Original Theory of (non-human) Corporeal Substance. As he began to work through the implications of his Aristotelian assumptions, a number of severe problems with his original conception of primary matter became evident.

In chapter 4, I discussed at length some of the problems that in 1669 Leibniz came to see with his Original Theory of Corporeal Substance and that led him to revise that theory. In brief, I argued that given the Principle of Causal Self-Sufficiency and the Principle of Substantial Activity, Leibniz came to realize that the features of the individual corporeal substance *S* did not strictly belong to *S* and that in order to construct a theory of substance that was appropriately self-sufficient, he would have to give each corporeal substance its own active principle or mind-like form. The moral to the developmental story of chapter 4 was that Leibniz’s commitment to his Aristotelian assumptions forced him to change his conception of the active principle in non-human corporeal substances.

Against the Platonist background set in chapter 5, it is now appropriate to unveil another major part of Leibniz’s developmental story in 1669. Once again, the Principle of Causal Self-Sufficiency and Principle of Substantial Activity play pivotal roles. In this case, the moral to the story is that these Aristotelian assumptions forced Leibniz to change his thinking about the passive principle in nature. Between 1663 and late 1668, although the details of Leibniz’s account of matter vary in the way noted earlier, he persists in believing that the passive principle contributes something positive to the substantial nature. What Leibniz came to realize in 1669 was that it followed from the Principle of Causal Self-Sufficiency and the Principle of Substantial Activity that passivity by itself could have no positive features. According to the Principle of Causal Self-Sufficiency, for example, purely passive matter can strictly speaking have no features or states since it has no active principle to cause them. As Leibniz makes the point in some notes of 1668–69: since nothing can be said of matter without form, matter is itself “nothing.”¹⁵ Once Leibniz articulated his Aristotelian assumptions and began to examine the exact contribution that the passive matter in a corporeal substance was supposed to make to the complete *ratio* of the corporeal features of that substance, the Reality Problem became evident. Leibniz realized that the role assigned to material passivity in the explanation of corporeal features was incoherent in that it was supposed to contribute features to the corporeal substance which, given the Principle of Causal Self-Sufficiency, it did not strictly speaking have. It was sometime in the middle of 1669 that Leibniz rejected his earlier conception of matter as something that although passive, contributes positively to corporeal substance. Leibniz came to see that an explanation had to be offered for any positive feature

14. II i 16. 15. VI i 502.

attributed to matter, that the explanation had to involve more than mere passivity, and therefore that activity of some sort had to be imported into the passive principle in nature. In brief, at the heart of Leibniz's increasing dissatisfaction with the notion of primary matter or body qua matter was the fact that brute passivity lacks all positive features and therefore can neither play a role in the explanation of substantial features nor add anything good to the world.

While telling the developmental story about mind in chapter 4, I identified the theological essay, *On the incarnation of God*, as a transitional piece. Among other things, I argued that the text reveals Leibniz's attempt to revise his Original Theory of Corporeal Substance in a way that would satisfy the demands of his Aristotelian assumptions. In that essay, Leibniz endeavors for the first time to create a genuine substantial union out of individual minds and bodies. The *Conspectus* of 1668–69 marks a similar turning point in the developmental story about matter although the evidence here is less clear.¹⁶ In this essay, Leibniz admits for the first time that body qua matter has nothing in its nature to cause or explain some of its fundamental features, and that it has those features due to its active principle, that is, God. Leibniz writes: "there is nothing without a *ratio*," there is no motion "without continual creation," and body contains neither the "origin of motion" nor the "origin of cohesion." The point here seems to be as follows: there is nothing in body qua matter that can act either as the source of motion or the source of cohesion, and yet there is motion and cohesion in a body qua form; therefore, since the *ratio* for these features is not in the passive principle, it must be in the active principle, that is, God, who produces the motion and cohesion through continual creation. In brief, there will be no cohesion without the "continual creation" of bodies by God.¹⁷ Moreover, since primary features like figure and magnitude depend on the cohesion of the parts of the body, it would seem to follow that there will be no corporeal features without continual creation. I showed in chapter 4 that Leibniz deleted his statement about continuous creation from the published version of the letter to Thomasius. I argued that between the original letter of April 1669 and the published version of early 1670, Leibniz was motivated to change his view about the active principle in corporeal substance in order to make it cohere with his original Aristotelian assumptions. I now want to show that something very similar was underway concerning the passive principle in corporeal substance, and that the *Conspectus* bears witness to the beginning of a profound shift in his thinking.

In the April 1669 letter to Thomasius, Leibniz insists that body qua matter contributes antitypy or resistance to corporeal substance, while God

16. The Academy editors have placed the *Conspectus* within 1668–69. See VI ii 571. According to the developmental story I present here, it must have been written after April 1669. In fact, there are several details of the text that suggest the later date: e.g., the use of the theory of traduction, and the first explicit presentation of the Principle of Sufficient Reason. For more on this, see ch. 2, n. 69.

17. VI i 494.

plays the role of active principle. The idea is that God takes the body qua matter or passive principle and through the process of continual creation, produces a corporeal substance. Of special importance to us now is the fact that in the original letter, body qua matter makes a contribution to corporeal nature on an ontological par with the contribution made by God: when the divine contribution (activity) combines with the material contribution (resistance), the result is a corporeal nature that can act as the cause and explanation of its features. In the *Conspectus*, Leibniz seems to imply that body qua matter will contribute nothing without the help of God. Whereas in the original letter, God takes matter that is already cohesive and *then* does something to it, in the *Conspectus*, God must make matter cohesive *before* anything else can occur.

By the end of 1669, Leibniz has changed his mind. Between the composition of the *Conspectus* in 1669 and the changes made to the published version of the letter to Thomasiaus in the winter of 1669–70, Leibniz recognized that as long as God was the active principle in nature, corporeal features would not strictly speaking belong to corporeal nature. Leibniz saw that in order to attribute any positive features to the corporeal element in substances, he would have to populate nature with mind-like substances. Since none of the changes made to the revised version of the letter directly concern the account of body qua matter, it seems clear that Leibniz had not yet decided exactly how to solve the problem facing the passive principle in corporeal substance: in the published version of the letter, Leibniz still claims that body qua matter has resistance, although nowhere in the text does he offer an explanation of how matter comes to have such features. However, when Leibniz deletes the statement about continual creation from the published letter and inserts an incorporeal principle as one of the fundamental entities in nature, he comes down firmly on the side of his new approach to substance. By the end of 1670, he will proclaim that each non-human substance has its own mind-like active principle, and moreover that the passive principle of each corporeal substance is constituted of an infinity of mind-like substances.

A general summary of the relevant part of Leibniz's philosophical development may be helpful at this point. In 1666–69, Leibniz's primary concerns were with legal, ethical, and theological matters. In the theological essays of the period, he was concerned to solve a number of difficult problems. He brought to these problems a set of Aristotelian and Platonist assumptions about substance which he attempted to use and articulate for the first time in those essays. As he began to work through his views about substance and body in the essays and letters of 1668–69, he discovered tensions and problems within those assumptions. As I argued in chapter 4, soon after April 1669, Leibniz recognized that it followed from his Aristotelian assumptions that corporeal features could not strictly speaking be attributed to individual corporeal substances unless each substance was given its own mind-like principle of activity. I now want to claim that at around the same time and for much the same reasons, Leibniz realized that positive features

could not strictly be attributed to the passive principle in corporeal substance unless it also contained an active principle that could function as the source of these features. At some point after April 1669, Leibniz was motivated to change his views about the passive principle in corporeal substance in order to make it consistent with his original Aristotelian assumptions. I maintained in chapter 4 that he had to give each corporeal substance its own mind-like principle of activity; I am here claiming that in mid-1669, he decided to transform the passive principle in nature into something appropriately active. In the *Conspectus*, Leibniz is struggling with a number of issues related to God, created mind, and the relation between the two. When he proposes at the beginning of this outline for his grandiose *Catholic demonstrations* that God causes the cohesion in bodies by continual creation, he is offering a temporary solution to a grave problem. By the end of 1669, Leibniz was in search of a new way to conceive the passive principle in corporeal substance. In order to remain consistent with his Aristotelian and Platonist principles, he decided to populate the created world with mind-like substances that could act as the cause and source of corporeal features. Let's now turn to this next phase in the evolution of Leibniz's views about passivity.

In August 1669, while on vacation with Boineburg, Leibniz met Erich Mauritius, who introduced him to some of the publications of Christopher Wren and Christiaan Huygens on the motion and collision of bodies. Leibniz's new-found fascination with these topics encouraged him to offer a more thorough account of the cohesion and motion of bodies than he had previously done. It is exactly at this point in his philosophical development that the problem of the continuum began to raise its monstrous head.¹⁸ Let's remind ourselves of what a many-headed monster it was. In the history of philosophy, the problem of the continuum is the problem about how a line or any other continuous mathematical quantity can be composed out of things like points or indivisible line segments. While it is true that Leibniz was deeply interested in this mathematical puzzle, and that his invention of the infinitesimal calculus developed out of that interest, he was equally concerned to answer a number of related questions about time, motion, and matter. As Richard Arthur has summarized the point:

Leibniz's contemporaries and predecessors understood the problem as pertaining not just to purely mathematical entities, but to all supposedly continuous things. In this wider sense, the continuum problem is that of the composition of anything continuous: is matter infinitely divisible, or does it have indivisible first elements or

18. I do not mean to suggest that Leibniz was unaware of the problem previously, but rather that it was in 1669 that he came to see the full range of its associated difficulties. See Beely's *Kontinuität* for an account of Leibniz's earlier concern with the problem and for a thorough description of its intellectual context.

atoms? Is motion composed of an infinity of instantaneous tendencies to move? Is space composed of points, or time of instants or moments?¹⁹

For seventeenth-century natural philosophers, the problem of motion was especially important and extremely difficult: since a proper theory of motion required an account of physical and temporal parts, a theory of motion seemed to demand an account of matter and time.

In the period late 1669 through early 1671, Leibniz confronted the problem of the continuum head-on. Among other things, he was concerned to solve the Problem of Cohesion where the question is: how do the parts of a body cohere so as to produce a single thing? Because in 1669 Leibniz had decided to reconstruct the passive principle in corporeal substance so that it could act as the causal source of its features and because he believed that only something mind-like could function as a principle of activity, it followed that in order to explain the cohesion of the parts of body, Leibniz had to resort to mind-like active principles. In short, Leibniz's metaphysical commitments at the end of 1669 demanded that his solution to the Problem of Cohesion depend on the activity of created minds.

Consistent with Leibniz's Original Theory of (non-human) Corporeal Substance as he presented it in *On transubstantiation*, the divine mind acts by means of an Idea qua substantial form to produce the cohesion among the parts of a body. By such means, divine activity itself solves the Problem of Cohesion. When Leibniz decided in 1669 to give each non-human corporeal substance its own mind or principle of activity, he had to rethink his solution to the Problem of Cohesion. In the winter of 1669–70, Leibniz read (or reread) Hobbes' work on motion and was greatly influenced by the Englishman's notion of endeavor (*conatus*). As I claimed in chapter 4, Hobbes' idea of a momentary endeavor gave Leibniz a tidy way to conceive both the motion of bodies and the thinking of minds. It is in the summer of 1670 that Leibniz begins to proclaim proudly that his investigations about motion have led to insights about mind. With great finesse, Leibniz managed to explain the continuity of motion, time, and matter in similar ways: each was to be constructed out of infinitely small elements. In this context, what was particularly helpful to Leibniz about Hobbes' notion of endeavor was that it offered a neat way of describing the actions of momentary minds and thereby of explaining cohesion. It follows from the Second Theory of Corporeal Substance that the cohesion among the parts of the body is due to the actions of its momentary minds.

During the period 1670–early 1671, although Leibniz was not entirely satisfied with his account of cohesion, he considered his solution to the Problem of Cohesion better than the alternative accounts. He later rejected his solution and for some years grappled with other ways to solve the problem. But, for our purposes here, it is significant that he was relatively satisfied with his solution to the Problem of Cohesion during the precise period

19. Arthur, *Labyrinth*, Introduction.

within which he transformed the passive principle in nature into a panorganic collection of mind-like substances. Let's consider the evidence. In a letter to Hobbes of July 1670, Leibniz insists that, while he agrees with much of what the great man has said about motion "where the foundations which have been laid seem to be remarkably justified," Hobbes has failed to account clearly for "the cause of consistency, or what is the same thing, of cohesion in things." Leibniz offers his own solution to the problem: "I should think that the endeavor of the parts toward each other . . . would itself suffice to explain the cohesion of bodies."²⁰ In a letter to Oldenburg of September 1670, Leibniz discusses these topics at length. He makes several points that are relevant to our discussion. First, he insists that neither Descartes, Gassendi, Hobbes, nor any other contemporary has properly explained the cohesion among the parts of the body. Second, he notes that he has arrived at his own views about cohesion by combining the metaphysical insights of Aristotle with those of Hobbes. In the letter to Oldenburg, Leibniz summarizes his Second Theory of Corporeal Substance and insists on the importance of incorporeal beings in nature. Consistent with his comments in the letter to Hobbes, Leibniz's solution to the Problem of Cohesion depends on the insertion of an infinity of momentary minds into matter. He explains to Oldenburg: "Nor is it possible that there be any other convincing explanation of the connection among things other than that which refers to incorporeal beings and their extraordinary activity which is perpetual. . . . Nor is it possible that the world . . . lacks or has lacked incorporeal beings."²¹

Despite the elegance of his Second Theory of Corporeal Substance and despite the relative satisfaction with his solution to the Problem of Cohesion, in the summer and autumn of 1670 Leibniz acknowledges some unfortunate consequences of his position. For example, because matter was taken to be infinitely divisible and because for any part of matter to move, there had to be a mind or active principle to move it, it followed that the arrangement of the parts of the body would be caused by an infinite number of minds. That is, every body has an infinity of parts; for a body to be cohesive, all its parts have to move; for any part to move, there must be a mind-like active principle to move it; therefore, every body will be constituted of an infinity of momentary minds moving bits of matter. To put it another way, since the cohesion among the parts of a body depends entirely upon the action of each of the infinity of minds, every body has an infinite number of unifying principles. That Leibniz is concerned with exactly these difficulties is clear. In particular, he finds the instability of the unity formed by momentary minds and extended matter problematic. As he ex-

20. II i 57: L 107.

21. II i 63-64. Leibniz's comments to Oldenburg about the reconciliation of Aristotle and Hobbes are consistent with the developmental story offered in chs. 1-4: he was committed to an Aristotelian conception of substance into which he easily inserted an account of activity in terms of endeavor.

plains to Oldenburg in September 1670, there cannot “be one being or one body” unless all the parts of the body are in motion. Therefore, in order for a body to be a single whole, all its parts must be in a coordinated motion. But if the unity and identity of the body are constituted of that coordinated motion or that arrangement of parts, then the body will be a constantly changing thing. As Leibniz explains: “Mass is constituted by a state of, what I call, prime matter and is able to be broken by the smallest impulse.” A body will be a collection of an infinity of creatures, each of which is itself a momentary mind and some part of matter; it will not be a stable object since each arrangement or state of primary matter is momentary. Therefore, there is a sense in which no body will retain its unity or identity for more than a moment.²²

It was also during the summer and autumn of 1670 that Leibniz became acutely aware of the Reality Problem and the issue of how there can be a genuine unity or reality that has matter as a major constituent. In July 1670, Leibniz wrote two letters in which he outlines the physics of the *New Physical Hypothesis*.²³ As I will argue below, by the time of the publication in early 1671 of this work and its companion piece, the *Theory of Abstract Motion*, Leibniz had denied the existence of extended inert matter. Although the evidence is not entirely clear, there is reason to believe that he did not make this radical shift until October or November of 1670 and that it was primarily the Reality Problem that motivated him to do so. Let’s consider the facts. As Leibniz confesses to Oldenburg in his letter of September 1670: “nothing plagues me more than the cohesion of parts in the whole. . . . As I readily admit, it is necessary that there be another cohesion among things . . . ; but how this cohesion comes about, I am not able to explain.”²⁴ We find here the original version of an argument that will become prominent in Leibniz’s later writings, namely, that the reality of a collection depends on the reality of its parts and that the reality of the parts demands that the parts themselves be “wholes” or unities. What plagues Leibniz in the autumn of 1670 is that he cannot explain the cohesion of the parts *within* the body or coherent whole. In other words, although Leibniz is relatively satisfied with his account of cohesion, according to which the parts of a body B cohere as long as those parts endeavor within the body so as to form a coherent whole, he cannot explain how the parts of B are themselves real unities or wholes. One way of capturing the intuition here is to remind ourselves that Leibniz’s robust sense of causal and explanatory self-sufficiency demands that unless each of the parts or constituents of B offers a complete *ratio* of its own unity, it will not be able to contribute in the right sort of way to an explanation

22. Ibid.

23. The Academy editors write in their introductory comments to the *New Physical Hypothesis* that Leibniz’s letter to Oldenburg of July 1670 indicates that Leibniz had developed the physics presented in the published work by that time. See VI ii 219.

24. II i 63.

of the unity of B. That is, it follows from the Principle of Causal Self-Sufficiency that B can strictly be said to *have* cohesion only if the parts that constitute the nature of B are themselves real unities.

But why exactly can Leibniz find no real unities within B? The letter to Oldenburg of September 1670 offers an important clue in solving the mystery behind Leibniz's rejection of material passivity and his acceptance of what we might call 'mental passivity.' In order to grasp a major part of Leibniz's motivation, we need to recognize that the peculiar nastiness of the Reality Problem arises from the utter inertness of extended stuff. As long as nature is filled with inert extended matter, there can be no unities or "wholes," and the explanation of cohesion or any other feature will be insufficient. In brief, as long as nature contains material passivity, there cannot be a solution to the Reality Problem. As Leibniz suggests in the letter to Oldenburg, before we can fully explain the cohesion and unity among the parts of the body, we must explain the cohesion and unity among the parts of the parts. That is, we have to explain the cohesion and unity *within* each of the parts before we can explain the cohesion *among* them.

We need to be careful here and distinguish between a version of the Problem of Cohesion (that is, the continuum problem) and the Reality Problem. There is no doubt that most of Leibniz's comments in the letter to Oldenburg concern the former. In particular, Leibniz finds vexing the fact that the cohesion of a body B assumes that the parts of B are themselves a cohesive whole and that the parts of those parts are cohesive wholes as well. Since, at any level of parts (whether of B or the parts of B or the parts of the parts of B), the cohesion of those parts depends on the cohesion of the parts of those parts, one is left wondering how there can be any unified or cohesive object in the world. As Leibniz jokingly asks, "why does the wind not carry off our heads like it carries away balls?"²⁵ It is important to grasp that as serious as this problem is, it is one that applies with equal force to the theory of panorganism that Leibniz soon developed. According to panorganism, there are substances within substances *in infinitum*. We will save the details for later, but for now it is noteworthy that the same regress argument applies with equal force here: before we explain the cohesion of B, we must explain the cohesion of the parts of B, and so on.

For the first time in the letter to Oldenburg, Leibniz suggests the severity of the Reality Problem, whose basic point is that there cannot be a unity or genuine reality in a body B because matter *in its nature* has no such features. Since inert passive matter depends entirely on an active principle for all such positive features, it cannot contribute in any way to the reality and unity of B. But let's say more about the precise source of the difficulty. The severity of the problem for Leibniz in September 1670 was significantly increased by his self-inflicted metaphysical demands. First, consider his point about the unity and reality of the parts of the body. Following the Supreme Being Assumption, unity and reality are a function of one another. As long as the parts of

25. II i 63.

bodies have no unity, they have no reality; and as long as the parts have no reality, the reality and unity of the whole is in doubt. Second, consider the problem about the explanation of features. Following the Principle of Sufficient Reason and its associated notion of complete *ratio*, Leibniz was committed to the idea that for everything in the created world, there is a complete *ratio*. The complete passivity of the material principle in bodies implies that there cannot be a complete *ratio* either for the cohesion within any particular body or for any of the corporeal features that depends on cohesion. Another way of making the point is to note that according to the Substantial Nature Assumption (which, as noted in the conclusion of chapter 2, is very closely related to the Principle of Substantial Self-Sufficiency), for every substance S, S has a nature that contains the complete *ratio* for those features that strictly belong to it, and moreover those conditions are in theory intelligible. Since matter in its nature has neither cohesion nor unity, it can make no contribution to the explanation of those substantial features. It follows from the Principle of Causal Self-Sufficiency that those features therefore do not strictly belong to the substance whose nature is partially constituted of material passivity. An example may help to highlight the difficulty. Sally, the slug, has a body that is smooth, shiny, and cylindrical. All of these features depend on the organization and cohesion of the parts of Sally. According to Leibniz's Second Theory of Corporeal Substance, Sally has a substantial form or active principle that organizes some passive matter so as to create Sally's nature. That nature, which is constructed out of these two principles, is supposed to be the cause and explanation of Sally's features or substantial states. The problem here is that because Sally's passive principle has *nothing* positive in its nature, it can make no contribution to the production of those features.

What did Leibniz do? Soon after writing to Oldenburg in September, he decided on a radical remedy for his problems. His solution was ingenious in a number of ways. Not only did it allow him to solve both the Reality Problem and the Plenitude Problem in a way that was wonderfully consistent with his various metaphysical assumptions, it gave him the chance to include another ancient philosophical idea in his eclectic mixture. Once again, Leibniz managed to rectify and expand upon his metaphysics through the rehabilitation of an ancient theory. And once again, he sent his first attempt to outline this solution to Thomasius. By the end of 1670 he had hit upon his solution: to construct the passive principle in corporeal substance out of an infinity of mind-like substances.

3. From passivity to vitality

I began chapter 6 with the December 1670 letter to Thomasius in which Leibniz compares his illustrious teacher to Plato and demands that we return to final causes in nature. But there is much more to the letter than an exaltation of former teachers and final causes. Leibniz also describes his recent development in philosophy.

I recently had a kind of dream about physics. You know that I believe that the efficient causes of all things are thinking and motion, where the latter is local motion (for I do not think that there is another kind), and the former is the thinking of first mind, i.e., of God (from whom the secondary minds themselves derive what they think).

Leibniz continues with a comment we have seen: “the first mind in its wisdom arranged things from the beginning so that there is rarely need of extraordinary concurrence . . . for the conservation of things.” As Leibniz reasons, no one would praise a manufacturer who must correct his work every day.²⁶

Clearly, the direct causal relation between God and creaturely features, which was so central in Leibniz’s Original Theory of Corporeal Substance, is here fully severed. The Supreme Being continues to emanate the divine essence to its products, but each creature has its own active principle by means of which it acts. I described this activity in chapter 4. According to the Second Theory of Corporeal Substance, the nature of a corporeal substance *S* is constituted of a mind-like substantial form *F* and a passive principle *P*. Consistent with the (1670) Substantial Form Assumption and the (1670) Passive Principle Assumption, the features of *S* are caused and explained by this organization. Of particular importance to us here is the fact that, following the Substantial Form Assumption, every created mind or substantial form is permanently attached to a passive principle so that it will only act outside itself through that principle. Moreover, following the (1670) Passive Principle Assumption, *P* contains nothing active in itself.

Against this background, it is striking that by the end of 1670, Leibniz is prepared to transform the passive principle in nature into something that is fully active. While it remains true that the active principle and the passive principle in a corporeal substance *S* are constantly united and that the features of *S* reduce to the organization formed by the constant activity of the one on the other, the nature of the passive principle and the nature of their relation have been radically changed. As Leibniz announces to his teacher in December 1670, “[g]iven these assumptions” about the arrangement of things by God at the beginning: “I came to think of motion as the sole universal [thing] on our earth, from which a *ratio* can be given for all the phenomena, which we perceive as many and marvelous in their appearances: certainly now generally, then specifically, when the same phenomena are more carefully examined.”²⁷ Leibniz here suggests that motion has replaced

26. II i 73–74. The Latin is: Habui et ego nuper somnium quoddam physicum. Scis eam mihi sententiam esse, omnium rerum causas [sic] efficientes esse cogitationem et motum, motum inquam localem: neque enim alium credo: cogitationem autem primae mentis, i.e. *Dei* (a qua ipsae secundae habent, quod cogitant). Prima autem mens pro sapientia sua ita res initio instituit, ut non sit ei facile ad conservationem rerum opus extraordinario concursu, prorsus ut illum automatopoeum nemo laudaverit, qui quotidie aliquid in opere suo emendare cogatur.

27. II i 74. The Latin is: His positis, venit mihi in mentem motus quidam unicus universalis in terra nostra, ex quo omnium phaenomenorum, quae in speciebus multa ac mirabilia sen-

passive matter as the universal stuff, which (somehow) is organized by individual created minds. That is, the “first mind” arranges the “secondary minds” in “the beginning” so that the union of these secondary minds and this universal thing called ‘motion’ somehow constitutes a *ratio* for the phenomena. But how? In the remainder of the letter to Thomasius, Leibniz summarizes the physics of his *Schediasma* and then presents his views about aether which he describes as “a most subtle body” whose movement “is the cause of most phenomena.”²⁸ Although Leibniz is silent about the precise relation between the secondary minds and the aether, the December 1670 letter to Thomasius offers the key to his new theory of passivity: there is an aether or universal vitality that has replaced the passive inert stuff of his previous view.

A number of questions arise at this point. However, before turning to a more detailed account of Leibniz’s views about this aether or universal vitality, I would like to draw attention to another aspect of the December 1670 letter to Thomasius. In chapter 3, I discussed the letter to Thomasius of April 1669 in some detail and paid particular attention to its conciliatory method. Although the letter of December 1670 is neither as important philosophically nor as subtle rhetorically as the earlier one, there is an interesting parallel between the two. Like the earlier letter to the December one begins by praising a work by Thomasius and attributing to it a developed philosophical position that it does not contain. This time, the new publication is Thomasius’ *Physica* of 1670, “in which the greater part of philosophy” is explained and in which Thomasius is supposed to have emphasized the importance of final causes and the dangers of materialism. Given Leibniz’s comments, it is remarkable that while Thomasius’ dialogue does discuss final causes, it includes neither a highly original nor thorough account of this type of cause. Nor does it contain an extended argument against the dangers of contemporary materialism.²⁹ Once again, Leibniz is attributing to his teacher the inspiration for some of his own new commitments, and using his mentor as a sounding-board for his newly developed ideas. The December 1670 letter is also quite like the April 1669 in its lack of crucial details. Leibniz only hints at the profound changes in his thinking about physical matters. But like the earlier letter, once we realize that Leibniz’s philosophical moralizing is as much about himself as about his teacher and once we see his praises and complaints in this light, we are able to discern a good deal about the motivation and inspiration behind Leibniz’s new vision.

Leibniz complains to Thomasius that his contemporaries neglect “the rational causes” of things and attend too much to material principles. He congratulates his mentor for attempting to follow in the footsteps of Plato by

timus, ratio reddi possit: generatim nunc quidem, speciatim tunc, cum phaenomena ipsa magis excussa erunt.

28. Ibid.

29. Full title is: *Physica, Perpetuo dialogo, suis tamen capitibus interciso, sic adornata, ut scientia naturalis non tantum definiendo ac dividendo, sed etiam celebrioribus attingendis controversiis, idque plana methodo nec difficili, explicetur.*

attending to the other principle of nature, namely, mind. Having praised Thomasius, Leibniz describes the world as a “great republic” that moves “toward the greatest harmony.” I will return to the image of the world as a republic in the next chapter. The point to emphasize here is that Leibniz is offering his teacher a first glimpse of his new conception of nature according to which God emanates a vital spirit or aether that is then organized to form the mind-like substances in nature. When Leibniz goes on to propose that his account of aether is that of “a most subtle body” whose movement “penetrates” and hence explains (almost) everything in nature, he is displaying how this vital ingredient is supposed to work. By such comments, Leibniz made clear to his teacher what is less obvious to us, namely, that the mind-like substances that are the source of this universal motion hark back to the ancient notion of pneuma or spirit. As Leibniz learned from Thomasius himself, according to many ancient thinkers, this spirit was supposed to penetrate everything and act as the vital ingredient in nature. It will be helpful to review here the most relevant facts about the theory of a worldly pneuma or World Soul. It is a history with which Thomasius and his student were thoroughly familiar and one from which Leibniz drew inspiration in the autumn of 1670.

Panorganic vitalism

In Book I of *On the Heavens*, Aristotle proposed a “fifth essence” or aether which constitutes the substance of the superlunar world. In *On the Generation of Animals*, he connected the nature and function of this celestial aether to the pneuma or ‘breath of life’ in animals. Aristotle distinguishes between fire as a destructive force and fire or heat as a source of life and explains that it is “the heat of the sun and the heat in animals [that] brings about generation.”³⁰ Some ancients appeared to have taken this pneuma to apply to the universe as a whole. Here the idea was that the pneuma was the vitalistic principle in nature. As Sextus wrote: “we have a certain community not only among ourselves and with the gods, but also with unreasoning animals. For a single pneuma pervades the whole world . . . , [and] unites us with them.”³¹ The Stoics turned Aristotle’s notion of pneuma into a fiery source of life and movement. It is striking that the general features of Leibniz’s creation story in the *New Physical Hypothesis* bear a resemblance to the Stoic account. For the Stoics, fire and air permeated the cosmos in the form of pneuma; because these components were in a constant state of tension, they were the active force in the cosmos. Depending on their proportions

30. *On the Generation of Animals*, 737a1–3. In the creation story offered by Leibniz in the *New Physical Hypothesis*, the original source of activity in the created world is also the sun.

31. Quoted in M.R. Wright’s *Cosmology in Antiquity*, 118. I am greatly oversimplifying the fascinating details of the ancient views about pneuma and World Soul. I have been aided in my summary by Wright’s helpful book, esp. 113–25, by the account of these topics in ancient and early modern thought in A.J. Pyle’s *Atomism and Its Critics*, 376–83, and by discussions with Eyjólfur Emilsson.

and specific tensions, fire and air could produce the nourishment and growth of plants, the perception and locomotion of animals, or the intelligence of humans. The tension between fire and air was also responsible for the cohesion and unity of bodies, and hence for corporeal features. As a recent scholar writes: “*Pneuma* was thus the vital ingredient of the Stoic cosmos, maintaining the whole as well as the bodies within it. . . . The consequence of this way of thinking was a literal *sympatheia* or ‘being affected together’ in the interaction of the parts, and between the parts and the whole.”³² According to the classic work of Sambursky, for some Stoics:

The idea of the existence of forces continuous in space and time merged in the Stoic doctrine with the conception of the ever-present and all-permeating Deity. *Pneuma* became a concept synonymous with God, and either notion was defined by the other. . . . This way of looking on God and the active force of the *pneuma* as two aspects of the same agent clearly brings out the gist of the physical world of the Stoics. The cosmos is formed and ruled by forces which activate matter in a similar way to the activation of the living body by the soul.³³

On the basis of such assumptions, some philosophers went on to theorize that the cosmos itself is a living entity in its own right, while others developed a notion of a World Soul (*Anima Mundi*). Not surprisingly, Thomasius gives a thorough account of such ideas in his *Exercitatio de Stoica Mundi Exustione*. Indeed, these ancient ideas about the *pneuma* as the World Soul or vital ingredient of nature were well known and frequently used by early modern philosophers.

As Thomasius was happy to insist, there is much that is heretical here.³⁴ But for someone like Leibniz, who in 1670 was keen to explain creaturely activity in general and the reality of the constituent parts of substances in particular, there was much of value. Of additional help to Leibniz was the Renaissance and early modern idea that there were vital spirits that were somehow intermediate between the material and immaterial. Animal spirits, for example, were considered by many philosophers to possess a power of activity not normally associated with bodies although they were not entirely immaterial.³⁵ In short, on the hierarchy of being, some of these spirits were supposed to stand between soul and body, between the immaterial and the material. Among the early modern thinkers who made interesting use of this notion and with whom Leibniz was familiar, the most important is Francis Bacon. Writing in 1627 about the mistakes of his predecessors, Bacon discusses the invisible things of nature: “And yet these be the things that govern nature principally; and without which you cannot make any true analysis and indication of the proceedings of nature. The spirits or pneumatics, that are in all tangible bodies, are scarce known.” According to Bacon, these “are the most active bodies” in nature, which are sometimes

32. Wright, *Cosmology*, 120–21. 33. Sambursky, *Physics*, 36–37.

34. See esp. *Dissertationes*, xiv.

35. For a discussion of the role of spirits, esp. in Renaissance and early modern medicine and chemistry, and citation to other literature, see Pyle, *Atomism*, 377–385.

considered natural heat and sometimes called the souls of “plants and living creatures,” but “are nothing else but a natural body, rarified to a proportion, and included in the tangible parts of bodies.” They “are in all tangible bodies whatsoever, more or less; and they are never (almost) at rest; and from them and their motions principally proceed . . . concoction, maturation, putrefaction, vivification, and most of the effects of nature; . . . for tangible parts in bodies are but stupid things; and the spirits do (in effect) all.”³⁶ For Bacon, spirits take gross matter, which is inert or “stupid,” and then move and direct it.

When Leibniz wrote to Thomasius in December 1670, he had come to believe that such “stupid” and inactive things in nature were inconsistent with the harmony of the world, and moreover that nature was constituted of active, non-stupid spirits or mind-like beings. Once again, Leibniz takes an ancient notion with modern currency and changes it to suit his particular needs. With wonderful flair, he transforms the ancient notions of *pneuma* and World Soul so as to satisfy perfectly his new metaphysical demands.

Let’s be clear. By December 1670, Leibniz has decided to rid the world of all “stupid,” inert stuff and to fill it with active vital beings. That is, he has decided to construct the passive principle in nature out of mind-like beings. These vitalistic beings are best thought of as mind-like sources of activity which themselves have no spatial dimensions but which exist at a point in space, and whose emanative causal power can be more or less expansive. In section 2 of chapter 6, we saw that as early as 1664, Leibniz conceived of minds as unities per se which constantly acted through emanation. In chapter 2, I showed that in the theological writings of 1668–69, he takes it for granted that minds are the only active things in the created world. With the help of the Platonist assumptions articulated in chapter 5, it is possible to discern both Leibniz’s assumptions about activity and the motivations behind his vitalism. In chapter 6, I offered evidence to show that Leibniz modeled the active things in nature on the infinite and perfect divine mind. It is now apparent that by late 1670 he has come to find untenable any ontology that includes inert stuff. The ancient theory of a vital World Soul gave him a way to fill the world with divine-like active entities which could add to the variety in the world while also explaining passivity.³⁷

In some of the texts of the period, Leibniz proposes a creation story according to which God emanates the World Soul, which is something like an undifferentiated vital spirit that is then organized into harmonious arrangements. Similar to the story told by some mechanical philosophers about the creation of corporeal things from matter, Leibniz proposes that in the beginning there is undifferentiated vitality spread throughout everything. As

36. Bacon, *Works*, vol. 2, 380–81.

37. Independently of Leibniz, Anne Conway developed metaphysical views that are strikingly similar to his. In her *The Principles of the Most Ancient and Modern Philosophy*, published posthumously in 1690, Conway claims that it “is contrary to the wisdom and goodness of God” for there to be creatures in the world that are not active; and she insists that each creature is “a world” with an infinity of creatures. See ch. 3, sects. 4 and 9.

we will see below, he describes this original vitality as “the spirit” of God. The idea seems to be that God first emanates this undifferentiated spirit and then organizes it into arrangements of mind-like beings which constitute the substances of nature: each has a nature constituted of an active principle and a collection of subordinate beings. The brilliance of the new position is that Leibniz has simply extracted material passivity from his metaphysics and replaced it with mental passivity where the idea is that the arrangements of mind-like substance assume the tasks of the passive principle in corporeal substance. For the details of this mental passivity, we will have to wait until the next chapters, but it is important to understand here that although there is nothing strictly corporeal in these substances, they are modeled on the Second Theory of Corporeal Substance, contain a passive principle, and hence are appropriately called *corporeal* substances: each has an active principle (the dominant mind-like form) and a passive principle, where the latter is a coordinated collection of subordinate substances, each of which is itself a corporeal substance. There are corporeal substances within corporeal substances *in infinitum*, although mental passivity has taken the place of material passivity. Each substance at each level has its own form and its own collection of subordinate substances. This sort of arrangement among corporeal substances is often called ‘panorganism’ by scholars of Leibniz’s later thought since each substance is an organism that is itself constituted of other organisms, and so on.³⁸

Let’s turn to some texts for more explicit evidence of this panorganismic vitalism. There are four letters that range from vaguely suggestive to relatively explicit in their account of the World Soul. All of these were written either as advertisements for Leibniz’s newly published *Theory of Abstract Motion* and *New Physical Hypothesis* or as attempts to clarify and expand on those published views. The first and most vague is a letter to Hermann Conring, an important scholar and well-known Aristotelian of Helmstedt.³⁹ This letter of February 1671 is one of Leibniz’s first attempts to present the metaphysical and theological importance of his new physics to someone in Germany. As he explains to Conring, his work on motion led him to discover “a certain new light” about God and mind. According to Leibniz, he “has shown there to be a certain ultimate *Ratio* of things (i.e. God), Universal Harmony, a most wise and most potent Mind.” Although he suggests that his view has ancient roots, he insists that his “doctrine has not before now been put in scientific form.”⁴⁰ As I suggested in the last chapter, Leibniz’s work in ethics and jurisprudence proved to be very important to this phase of his metaphysical development. Most particularly, it led to the ar-

38. In other words, I take the later doctrine of panorganism to be virtually identical with the position that Leibniz develops in late 1670, though the term ‘organism’ is not used by the young Leibniz. See n. 7.

39. On Conring, see Wundt, *Die deutsche Schulmetaphysik*, 98. I discussed another letter to Conring at length in ch. 1, sect. 4.

40. II i 79.

tication of his theory of Reflective Harmony, which is crucial to the proper functioning of the mind-like substances in their panorganic collections and which I discuss in the next two chapters. It is noteworthy that he promotes his new physics and philosophy to the relatively conservative Conring by emphasizing the interrelations between the legal work, the physics, and the metaphysics, which he suggests are all closely tied to "sacred matters." Because of its lack of details, the letter to Conring is an inappropriate base on which to build any grand interpretative claim. But its vague metaphysical proposals are full of clues. Leibniz insinuates that he has taken the ancient theory of God as the ultimate *ratio* of things and the source of Emanative Harmony, and turned that theory into a scientific one that answers questions in jurisprudence, ethics, and physics. But how? One possible answer is that the world is constituted of elaborately arranged emanations of the divine mind, some of which are human and some of which are the organized collections of the vitality of the World Soul. In fact, such a theory would connect Leibniz's work in physics and his work in ethics and jurisprudence: concerning the former, it would offer an account of motion; concerning the latter, it would both explain the motivations and goals of humanity and add to the variety in the world.

Lest we think Leibniz dared promulgate his radical proposals only to conservative Germans, consider a letter that he wrote to the Secretary of the Royal Society. In his letter to Oldenburg of June 1671, Leibniz makes the same general points that he made to Conring, but he also adds some details. He writes: "philosophers of all nations and times have discussed a certain universal Spirit or world Soul from which comes the life [vita] of things lacking reason and motion." According to Leibniz, "there is no one known to me who has explained mechanically the motion of this spirit, and the cause and effects of motion." He then proceeds to offer Oldenburg some of the details of the physical proposals in the *New Physical Hypothesis*. That Leibniz intends to erect his physics on a notion of the World Soul seems clear, as does the fact that he seeks approval from Oldenburg and the other members of the Royal Society. He writes: "You would be doing me a great favor if you write down the opinions of, and obtain favorable notice of those men in your society, not only those [men] who pour forth new light unto nature, but also those who brilliantly labor at natural theology and ethics."⁴¹

In another letter of June 1671, this time to Pierre de Carcavy, Royal Librarian in Paris, Leibniz is even more explicit. He writes: "it is not possible to reconcile the Phenomena of the World with the abstract laws of motion, [or] Experience with reason, unless a certain universal Spirit is admitted." Leibniz equates this with "the soul of the World or subtle matter," which he says that many ancients (e.g., Plato and the Stoics) and moderns have accepted. However, according to Leibniz, "there is no one so far as I know who has explained adequately the origin of motion, in this spirit and the mode

41. II i 122.

of doing everything in everything.”⁴² The notion of World Soul also helps to solve a number of theological problems, like “the nature of miracles.”⁴³ The basic idea here is consistent with the account of World Soul offered above: the World Soul is a subtle vitalistic “matter” whose organized arrangements constitute the non-human substances of the world and explain “the mode of doing everything in everything.” But a question arises at this point about Leibniz’s use of the word “matter.” Is this a wholly spiritual being and in that sense immaterial, or not? In the remainder of the letter, Leibniz does not waver from his basic assumption that anything that is genuinely material cannot be a source of activity. He explains that the Soul is similar to “an invisible fire that permeates all the things in our world”⁴⁴ and to the “spirit of God.”⁴⁵

The fourth and final letter to which I want to call attention is one to Otto von Guericke, a natural philosopher from Magdeburg. A significant feature of this letter of August 1671 is that von Guericke has his own version of a World Soul which is more material than spiritual and against which Leibniz vehemently argues. According to Leibniz, his correspondent intends to populate the world with “World-Bodies [Welt-Cörporen]”⁴⁶ which combine with space to create “worldly powers [virtutes mundanas]” and which are supposed to explain phenomena like gravity. While it is clear that Leibniz is perfectly content to take seriously another version of a World Soul, it is equally evident that he takes von Guericke to have failed in his account. The criticisms that Leibniz offers are revealing:

But above all one must take care not to use – in the manner of the Scholastics – such words as can be well said, but not explained or understood. For . . . what an earthly power [virtus mundana] might be, is as incomprehensible, without further explanation, as *substantial form, sympathy and antipathy, magnetic force, immaterial species*, and the like. And even if My highly esteemed Sir should then prove such earthly powers with a nice experiment, still this would not explain [erkläret] them, for it remains just as obscure from where . . . such powers originate.⁴⁷

This criticism displays two of Leibniz’s most basic assumptions. Before articulating these, let’s remind ourselves of the September 1670 letter to Oldenburg and the severity of the Reality Problem as Leibniz presented it in that letter. What plagued Leibniz about the problem was that he could offer no complete explanation of significant corporeal features because material passivity in its nature could not act as the cause and explanation of those features. In other words, in September 1670, he had no explanation of cor-

42. II i 126. The Academy editors are not certain about the month this letter was written. See II i 125. The Latin is: qui tamen originem motus in hoc spiritu, modumque agendi omnia in omnibus explicuerit satis, est, quod sciam, nemo.

43. II i 128. 44. II i 126. 45. II i 128.

46. We have here an excellent example of what Leibniz does in all his German letters, i.e., to convert a Latin word (*corpus*) into a hybrid of German and Latin to produce a term that is found in neither. The combination of Leibniz’s Baroque German and these terminological monsters make his letters in German obscure. I would like to thank Peter Schwartz and Silvia Beier for help with this one.

47. II i 145.

poreal or “earthly powers.” However, when he writes to von Guericke in August 1671, he seems to have solved this critical problem. In the passage quoted, Leibniz insists that a theory of World Soul reach both the highest standards of clarity and the deepest levels of explanation. He criticizes his correspondent for failing to offer a complete explanation of the origin and nature of corporeal powers. To put it another way, von Guericke’s theory has failed to include the complete *ratio* of the workings of the World Soul. But why? Since for Leibniz it is impossible for something that is genuinely material to be active, von Guericke’s theory has not explained the corporeal power in the world because it has attempted to ground such powers in material stuff. As Leibniz dramatically insists, whether the theoretical entity is substantial form, sympathy, or magnetic force, there will be an insufficient explanation of the source of its power unless something mind-like is assumed. Leibniz’s recommendation to his correspondent is to turn to “Mind” for a proper and complete explanation of such “powers.”⁴⁸

Let us summarize the cumulative effect of these letters. By the winter of 1670–71 Leibniz has developed a theory of a World Soul according to which there is a spiritual vitality that is organized by God and that functions as the complete *ratio* of the movement of non-human substances. According to Leibniz, the theory has important implications for his work in ethics, theology, and law. Although Leibniz is not explicit in the letters about exactly how the World Soul is supposed to do all these things, I have offered an interpretation that is consistent with these demands. So far, so good. But before we admit such a radical transformation in Leibniz’s ideas about the world, it would be helpful to consider a more explicit presentation of the theory.

The two-part *New Physical Hypothesis* and *Theory of Abstract Motion* of early 1671 is the first and most public presentation of Leibniz’s position. The former text contains the most complete articulation of the creation story that underlies Leibniz’s new theory of panorganic vitalism. I will avoid the details of the physical proposals in this complicated work and focus only on two points that are particularly relevant to our concerns here.⁴⁹ First, at the beginning of the text, Leibniz offers an elaborate account of creation, which he proudly proclaims to be “marvelously consistent with the teachings of the sacred scripture.”⁵⁰ In keeping with the Biblical account, Leibniz’s story maintains that the Supreme Being brings life and activity to its original creations which include light, a heavenly body (the sun), and the earth. What is particularly striking is that Leibniz assigns the divine role of the production of life and activity to an aether without which “all things will return to inert, incoherent, dead dust.” Leibniz describes the aether as “the *Spirit of the Lord*,” which “will pervade within all things and, in every di-

48. II i 145.

49. Unlike most of the other early works, the *New Physical Hypothesis* has now been examined by scholars. For the most recent general accounts and citations to earlier literature, see Garber, “Leibniz: Physics and Philosophy,” sect. 1, and Beeley, *Kontinuität*, chs. 7 and 9.

50. VI ii 225.

rection, will be *transformed into corpuscles* [bullae].”⁵¹ Few commentators on *New Physical Hypothesis* have paid much attention to the Biblical underpinning of this creation story, and when some recent scholars have described the story, they have missed its theological overtones.⁵² I propose, however, that Leibniz is engaged in something much more interesting than just another account of a material aether. Although the aether is extended and the physics is mechanical, there is little reason to interpret the aether as material stuff. Once again, my interpretative approach is to place Leibniz’s comments within a wider textual and philosophical context. It seems reasonable to take Leibniz at his word and to interpret this aether as “the *Spirit of the Lord*” emanated by its divine source so that its vital power will permeate all of creation. Consistent with the Biblical story, Leibniz’s proposal is that the vital power of God fills the world and makes order out of chaos.⁵³ When put in their proper historical situation, his comments imply that this Spirit is an undifferentiated vitality which, as it pervades the expanse of creation, is transformed into arrangements of vital beings.

The second point I want to emphasize about the *New Physical Hypothesis* is that these corpuscles are panorganic collections of corporeal substances as well as substantial atoms. As atoms, they are the real unities out of which everything else is made and in terms of which everything else will be explained. As Leibniz vividly explains: “These corpuscles now are the seeds of things, the stamens of species [stamina specierum], the receptacles of aether, the basis of bodies, the cause of consistency and the foundation of such great variety as we admire in bodies. . . . If they were absent, everything would be . . . dead and condemned.” However, each of these substantial atoms is itself a world. He asserts: “any atom will be of infinite species, like a sort of world, and there will be worlds within worlds to infinity.”⁵⁴

These two points from the *New Physical Hypothesis* may be summarized as follows. There is a spiritual and expansive vitality that the Supreme Being emanates and then organizes into the individual beings of nature. When organized, this vitality constitutes worlds-within-worlds of vital and various beings. Some of these beings are substantial atoms in that they are the ingredients out of which other creatures are made. These constitute the subject matter of mechanical physics. It is important to emphasize that each of these atoms is itself both variable and a world constituted of other atoms. It is also noteworthy that these vital individuals contain “the seeds of things.”⁵⁵ That is, consistent with the Causal Seed Doctrine, these atoms are constructed by God to remain dormant until it is time for them to be causally efficacious.

51. VI ii 225. The Latin is: *AETHER* (is enim fortasse est ille *Spiritus Domini* . . .) et intus omnia pervadet, passimque in *bullas* interceptur. . . .

52. For example, Beeley assumes the aether to be material, but thinks that this is consistent with Leibniz’s account of it as the spirit of God. See *Kontinuität*, esp. 146–48.

53. Some of Leibniz’s comments echo those of Augustine in the *Confessions*, X, esp. v–x.

54. VI ii 226.

55. For a discussion of the theological importance of this doctrine and its use by Augustine, see ch. 5, sect. 7.

Panorganic vitalism and the passivity problem

My argument for Leibniz's early rejection of material passivity and his acceptance of panorganic vitalism has relied on relatively few textual clues. While it is not surprising that Leibniz retains his characteristic restraint in explicating his views, his reserve is nonetheless frustrating. Besides the textual evidence displayed in the previous sections, are there other reasons to believe that he made such a radical ontological shift in the winter of 1670–71? In section 1, I articulated two particularly grave problems which I called versions of the Passivity Problem and which faced Leibniz's original conception of the passive principle in corporeal substance. My claim was that he was led to rethink his original theory because of these problems: he was persuaded to reject material passivity because passive material stuff could neither add to the variety and goodness of the world nor could it contribute to the causal and explanatory self-sufficiency of corporeal substances. In particular, I maintained that by September 1670 Leibniz had become acutely aware of the need to respond to the Reality Problem. If I am right in my analysis of Leibniz's philosophical development, then we would expect the theory of panorganic vitalism to solve these problems.

First, let's consider the Plenitude Problem. In the last chapter, we saw that between late 1670 and late 1671, Leibniz's views about Emanative and Reflective Harmony develop in dramatic ways. In this context, it is not surprising that he would have begun to find the utter sameness of inert matter particularly irksome. I propose that the more he came to see variety as a good-making criterion, the more frustrated he became with material passivity. For someone who believes that creaturely variety is a good thing, the possibility of reinventing the passive principle in nature must have been enticing. It is significant that Leibniz says in a passage quoted earlier from the *New Physical Hypothesis* that "any atom will be of infinite species."⁵⁶ By ridding the world of brute passive stuff and populating it with an infinity of various mind-like vital beings, Leibniz was simply making the world more divine. As we will see in chapters 8 and 9, by the end of 1671, he was prepared to add even more significantly to the variety in the world: in some texts from the second half of 1671, all the minds in nature perceive all the others in their own unique way.

There is an obvious sense in which panorganic vitalism solves the Reality Problem. In the letter to Oldenburg of September 1670, Leibniz suggests that the passivity of matter makes it impossible to offer a proper account of the unity, reality, and nature of a body; and he also implies that there cannot be a complete *ratio* for corporeal features due to the fact that there is nothing in passive extended matter that can act as the source of those features. One way of making the point is that the material passivity in corporeal substance S does not contribute to the complete *ratio* of the corporeal features of S, and therefore (given the Principle of Causal Self-

56. VI ii 241.

Sufficiency) those features do not strictly belong to S. Mental passivity solves both of the problems neatly: the passive principle in corporeal substance consists in perfectly unified and fully real beings whose nature it is to act constantly. Although we will have to wait for details until chapters 8 and 9, Leibniz reduces the suffering of substances to the perceptions of mind, and thereby rids the world of any brute passive stuff. For Leibniz in 1671, everything in nature is an unique instantiation of the essence of God, and hence is active, unified, and good.

What about the problem of the continuum? As recent scholars have noted, the *New Physical Hypothesis* and its companion *Theory of Abstract Motion* contain the “first systematic account of the continuum.”⁵⁷ As we have seen, in the letters to Hobbes of July 1670 and to Oldenburg of July and September 1670, Leibniz offers an account of the cohesion of bodies that is similar to the one found in his two-part published work. Although during this period he tinkered with the details of his solution, he seems to have been relatively satisfied with his response. According to Leibniz, for some body B, there will be an infinity of substantial atoms which have momentary minds, and whose momentary endeavors constitute the cohesion among the atoms and hence the cohesion among the parts of B. The fact that Leibniz is relatively content with his account of cohesion throughout our period lends strong support to the claim that it was the Passivity Problem and not the problem of the continuum that led him to despair about material passivity. What Leibniz came to see in the autumn of 1670 was that as long as there was “stupid,” inert stuff in corporeal substances, there could be no unities or “wholes” out of which to constitute the reality of bodies and in terms of which to explain its features.

4. Other evidence

The position for which I am arguing is dramatic. If I am right, then Leibniz has denied the existence of passive primary matter and populated nature with mind-like substances very early in his philosophical career. Given the importance of the point, it will be worth presenting all the evidence in favor of my conclusion, and then raising some questions. As far as I can tell, there are at least five reasons which are independent of the textual evidence given in sections 2–3 for believing that in the winter of 1670–71, Leibniz replaced material passivity with panorganismic vitalism.

For our first reason, let’s return to the letter to Oldenburg of September 1670. In that text, Leibniz first presents his solution to the Problem of Cohesion and then calls attention to the Reality Problem. I argued that as long as nature is filled with inert extended matter, there will be no unities or “wholes,” and the explanation of cohesion or any other property will be incomplete. As the letter to Oldenburg makes clear, Leibniz recognized that the solution to the Problem of Cohesion would not be entirely successful

57. Arthur, *Labyrinth*, Introduction; also see Beeley, esp. chs. 7 and 10.

without a solution to the Reality Problem. It is striking therefore that in 1670–71 Leibniz was proud of this account of cohesion and in his letters of the period announced it widely. Since it seems unlikely that Leibniz would have broadcast his solution to the Problem of Cohesion unless he had solved the Reality Problem, I propose that his satisfaction with his solution to the Problem of Cohesion implies that he had solved the Reality Problem by the means articulated above.

The second reason for accepting my interpretative conclusion about material passivity is that if the passive principle in nature is not constituted of mind-like substances by the winter of 1671, then the account of human mind in the *Theory of Abstract Motion* entails that inert matter plays a part in thinking. Leibniz offers for the first time in the *Theory of Abstract Motion* an account of human thinking. As explained in chapter 4, section 4, a human mind is a harmony of endeavors, where an endeavor is what results from an active principle or mind acting through its passive principle or matter. As Leibniz summarizes one of the crucial points in a letter to Johann Friedrich of May 1671, thinking or “the actions of mind consist in endeavor.”⁵⁸ He intends to show that “thinking is an endeavor or minimum motion, and there can be several endeavors in the same [space]. . . . Therefore, minds can think . . . unlike bodies.”⁵⁹ In an essay of 1671 entitled *On endeavor and motion, on perceiving and thinking*, he explains that “incorruptibility” is part of “the nature of mind” as “was first demonstrated by me.” Because bodies also “possess” incorruptibility insofar as they contain minds, it is important to distinguish between the minds in bodies and conscious minds. Leibniz concludes: “Therefore, the retention of all endeavors, or rather the arrangements among them, that is, of all their states, this constitutes mind.”⁶⁰ If we take matter here to be passive inert stuff, then such stuff is involved in the activity of human thinking. Leibniz could not have held any such view. Such an account of conscious mind would stand in contradistinction to Platonist assumptions like the Doctrine of the Hierarchy of Being and the Supreme Being Assumption: if inert matter were involved in thinking, not only would the self-sufficiency and unity of the conscious mind be contaminated, so would the ontological superiority of mind. In fact, if such inert stuff were the passive constituent in thinking, then the same instability that contaminates the “wholes” in Leibniz’s letter to Oldenburg of September 1670 would taint the constituents of thinking minds. That Leibniz takes human

58. II i 108. In ch. 4, I argued that a *conatus* or endeavor must involve the incorporeal or passive principle. According to Leibniz in texts like *On the incarnation of God*, the active principle must act through the passive. See ch. 4, sects. 3 and 4.

59. II i 113. Leibniz is explicit about the fact that thinking involves the passive principle. One of the central claims of *On the incarnation of God* was that thought (*cognitio*) requires a union because to render the thing thought is itself an action of the mind on the the body (i.e., the formation of a thought requires an action of mind on body). See VI i 534–35. For other citations, see ch. 4, sect. 3.

60. VI ii 285.

minds to be divine-like during the period is clear. As we have seen, he claims that the only difference between divine and human mind is the finitude of the latter. Nor was he alone in this. For example, in some comments that he made in May 1671 for Johann Friedrich on the resurrection of the soul, Leibniz explains that, for Digby: “the mind is something that is neither in time nor in space” and in that sense is “something just shy of God.” Although Leibniz insists that the nature of mind cannot be so easily grasped, he does not oppose Digby’s general point about the close affinity between divine and created minds.⁶¹ For Leibniz, it would have been inconceivable that something as divine as the activity of human thinking would be rooted in material passivity.

The third reason that we have for accepting my interpretative story about passivity is a theological one. In the last section, I noted that the transformation of the theory of passivity added significantly to the variety in the world and therefore increased worldly goodness. This is not the only theological benefit of Leibniz’s theory of panorganic vitalism. Although in 1671, Leibniz actively seeks solutions to problems in physics and jurisprudence, he does not abandon his theological project. In particular, for the first time he focuses on some specific theological difficulties that the standard mechanical conception of matter poses, and then presents a solution that avoids these problems. His solution to the problem of resurrection and his new-found response to the problem of the Eucharist offer significant evidence that by the winter of 1670 – 71, Leibniz has turned the passive principle in corporeal substance into a collection of mind-like entities.

I have discussed a part of the May 1671 letter to Johann Friedrich in this chapter and will return to it and its attachments in the next chapter. For now, let’s consider at greater length the essay that Leibniz enclosed with the letter and entitled *On the resurrection of bodies*. This is a long-winded and odd text that discusses, among other things, cannibalism and the bones of Lazarus. The question that concerns Leibniz is how to make sense of the Christian doctrine of resurrection, which demands that the soul be rejoined with its original body at resurrection even though the parts of that body may be “scattered all over the world.”⁶² Leibniz insists that the standard accounts of matter as passive stuff poses grave difficulties for the doctrine. He argues roughly as follows. For someone who accepts the existence of body qua matter, either there is some kind of general material stuff or there are material atoms. In the former case, because the matter of bodies will be in “continuous flux,” there is no single identifiable thing to be resurrected. In the latter case, while it is true that atoms (by definition) persist and there-

61. II i 113. For further evidence of Leibniz’s views, see ch. 6, sect. 2. It is striking that, in a letter to Elisabeth, Descartes makes the same sort of criticism of Digby’s grand proposals about mind. Descartes writes in November 1645: “As regards what relates to the state of the soul after this life, I certainly have less knowledge about it than M. Digby.” AT IV 333.

62. II i 115. In his discussion, Leibniz cites Paul, Ephesians 4.

fore that the atoms of a particular body can be reassembled, a number of questions arise as a result of the persistence of these basic material elements. It is at this point in the text that Leibniz indulges in a number of thought experiments involving cannibalism. He points out, for instance, that if one person ingests the body of another and absorbs those atoms, then it is unclear to whom the atoms belong. Although Leibniz thinks that come judgment day, they would probably belong to the first person to have them, his point is that the standard theory of atoms cannot easily explain resurrection. For our purposes, the important moral to the story is that there is more to a body than organized matter. But what? As Leibniz writes to Johann Friedrich: "I am of the opinion that in a body, whether of a human being or animal, vegetable or mineral, there is a core [Kern] of its substance. . . . This core is so subtle that it remains also in the ashes of burned things and can, so to speak, draw itself into an invisible center."⁶³

In the general context of my account of Leibniz's *Metaphysics of Substance*, the view promulgated in the letter to Johann Friedrich and its attached essay seems very strange.⁶⁴ He proposes that there is a substantial core in a substance that is constructed out of a substantial form and a passive principle or collection of subordinate substances. The oddity of this is clear: Leibniz has dared to give the fundamental constituents of nature (namely, substances) something that is apparently even more fundamental. What is going on? The short answer is that Leibniz was deeply concerned to construct a metaphysics that would solve two of the most difficult problems posed by Christian orthodoxy, namely, the doctrines of the Eucharist and resurrection. In order to construct a metaphysics that would be consistent with these doctrines, it was necessary to offer a coherent account of the identity of the body of a human being. In the case of resurrection, for example, Wanda wants to rest assured that come judgment day, it is her body (and not someone else's) that accompanies her soul through the pearly gates. In the case of the Eucharistic transfer, it must be the body of Christ (and not someone else's) that is present in the bread. As noted in chapter 6, section 3, it was Leibniz's opinion that the identity of a corporeal substance is determined by its substantial form, which is the combination of its principle of activity and the ontological correlate of its complete concept. It will be helpful here to call this the *dominant mind* or F of the substance. According to Leibniz's Second Theory of Corporeal Substance, in every corporeal substance S, there is a passive principle P that F organizes.

But what exactly is the passive principle P in the core of substance? As Leibniz writes to Johann Friedrich: "in everything there is a certain seminal center that is diffused throughout the thing." This center is "the fountain of life" and that "in which the very soul is implanted." The "subtle

63. II i 108.

64. In fact, its strangeness has led some commentators of the early works to reject the view as a passing fancy. See Beeley, "A Response to Arthur, Mercer, Smith, and Wilson;" Kabitz, *Die Philosophie des jungen Leibniz*, 87-88.

spirit or substance” cannot be destroyed but will survive through fire and other changes as “the flower of substance.” Leibniz insists that his theory has many benefits. Besides solving the problem of resurrection, it explains “the generation of plants from seeds,” the development of the seed in the uterus, and “the essences of chemicals.”⁶⁵ Moreover, Leibniz is proud that his theory agrees with “the Jews”: “Indeed, the Jews maintain that in a certain little bone, which they call Luz, the soul with this flower of substance remains unconquered by anything that happens.”⁶⁶ Whether it is the development of a crystal, the generation of a plant, the movement of an object, or the resurrection of the body, the same process occurs: there is a core of substance that diffuses the thing. I propose that the only way of making sense of Leibniz’s claims in his letter to Johann Friedrich and its related essay is to recognize that he assumes panorganic vitalism. As described above, panorganism entails that P is constituted of a collection of corporeal substances, each of which has a dominant mind or substantial form F organizing a passive principle P which is itself a collection, and so on *in infinitum*.

With this assumption in hand, let’s construct the long answer to the question about Leibniz’s distinction between a substance and its core. As suggested before, the theological doctrines of resurrection and the Eucharist demand that certain substances retain the same body or passive principle P over time, and moreover that P can retain its identity while also changing radically. Let me explain. Once we grant that the identity of a corporeal substance is determined by its dominant mind, it follows that the identity of a collection of such substances will be determined by their dominant minds. Since P is a collection of corporeal substances, say, $p_1, p_2, \dots p_{n+1}$, it follows that the identity of P will be equivalent to the set of dominant minds in $p_1, p_2, \dots p_{n+1}$. Leibniz’s notion of a core of substance is constructed so that each human substance will retain both its soul and its body from its birth to its death and for all eternity. As a substance, for example, Wanda is constituted of her soul or dominant mind F and her body or passive principle P. Since Wanda’s P will be equivalent to the set of substances $w_1, w_2, \dots w_{n+1}$ and since the dominant minds in $w_1, w_2, \dots w_{n+1}$ will determine the identity of P, Leibniz has cleverly constructed the core of Wanda to include exactly what is necessary to retain both the identity of her body and the identity of her soul through the various changes in a human life. That is, the core of Wanda will contain her F, the dominant minds in $w_1, w_2, \dots w_{n+1}$, and some passive principle for each of the dominant minds in $w_1, w_2, \dots w_{n+1}$ to organize.

But what about the dramatic changes that every human being suffers in the eternity of existence? In the letter to Johann Friedrich, Leibniz acknowledges those changes. He explains that the core is like “an embryo or seed of an animal [dem foetu oder frucht der Thiere],” which contains “the core of the whole body.” He insists that “this core of the substance of a human being neither increases nor decreases although its clothing and casing

65. II i 116. 66. II i 117. For more on this point, see ch. 6, n. 41.

[Kleidt und Decke] are in constant flux.” These fluctuations are extreme. Not only is “the core of the whole body” able to spread throughout the body, it is also able to “retract itself back to its source and fountain,” where it is in a state of such subtlety that “neither fire nor water nor any visible force is able to harm it.”⁶⁷ Leibniz’s suggestions here are both difficult and important. To understand how a substance is able to remain the same and yet change dramatically is to grasp Leibniz’s new conception of passivity and the key to his account of the Eucharist and resurrection. Not surprisingly, it is the core of the substance that remains eternally constant in the sense that the core is always constituted of its own dominant mind F and the dominant minds of the substances that constitute its passive principle P. Leibniz’s point is that as long as the core retains F and the dominant minds in $p_1, p_2, \dots p_{n+1}$, then the core remains constant regardless of how much the passive principles in $p_1, p_2, \dots p_{n+1}$ may increase and decrease. In case the passive principle in p_1 varies, the casing of S will have changed; in case the passive principles in each of $p_1, p_2, \dots p_{n+1}$ vary, the casing of S will have changed dramatically. But regardless of the modifications in the passive principles in $p_1, p_2, \dots p_{n+1}$, such changes are part of S in that they occur within its passive principle. Leibniz’s theory of a core of substance is enormously clever: it explains how a substance is able to remain fundamentally the same and yet undergo the changes of growth and death. In the case of Wanda, for example, she grows from infant to adult, then dramatically shrinks and expands between the moments of death and resurrection. Although all of these modifications are part of her substance, underneath these variations in her passive principle stands her unchanged core. Because the core just is her soul and body, it is ripe for life, death, and resurrection. It is also distinct from every other. Returning to the topic of cannibalism, Leibniz makes the point quite clearly: “Therefore, when one man is eaten by another, the core of each one remains what and how it was.” Neither core is “nourished” or affected by the other.⁶⁸

But an important question remains. What exactly is the causal relation between the eternally constant core and the fluctuating “casing”? The answer to this is the key to the theory of Metaphysical Cohesion that Leibniz constructs to conform to his theory of panorganism and that I will discuss in section 3 of the next chapter. Before turning to Leibniz’s new account of the Eucharist, it is worth emphasizing that a month after sending this lengthy presentation of his panorganism to Johann Friedrich, Leibniz wrote the letter to Pierre de Carcavy about the World Soul. In this letter of June 1671, Leibniz compares the Soul both to “an invisible fire that permeates all the things in our world”⁶⁹ and to the “spirit of God,” that has “impreg-

67. II i 108-09. Leibniz also asserts that “the salient point [punctum saliens]” is in the core. As Joseph McAlhany has pointed out to me, this was a medical term used to designate the first beginning of life or motion. The source of this use is Aristotle’s *On the Generation of Animals* (VI iii).

68. II i 109. 69. II i 126.

nated individuals with a sort of seminal fertility.”⁷⁰ It seems clear that by the late spring of 1671, Leibniz is committed to the idea that the world is diffused with vitalism.

The fourth reason I want to offer for the transformation of Leibniz’s conception of passivity also concerns a theological topic. In his letter to Arnauld of November 1671, although Leibniz offers a summary of his recent work, by far his lengthiest presentation concerns his views on the Eucharist. Similar to his analysis of the problem of resurrection (in his comments for Johann Friedrich of May 1671), Leibniz begins this discussion by showing that the standard accounts of matter pose severe difficulties for the doctrine. Leibniz insists that the views of “the moderns,” who would have us believe that “the essence of body consists in extension or [seu] quantity,” are incompatible with the miracle of the Eucharist.⁷¹ In an attempt to reveal the disastrous consequences that this conception poses for the doctrine, Leibniz offers two penetrating criticisms of a Cartesian account of body. First, Leibniz asserts: “A single thing can change into a new entity . . . mutation being the passage of the same thing from one state to another.” Leibniz’s point is insightful and similar to part of the argument used in the discussion of resurrection: if each body is constituted of extended stuff, and if all extended stuff is essentially the same, then it becomes enormously difficult to give any particular body (say, the body of Christ) a stable identity. It would seem that the identity of the body would change when there was the least change in its matter. Since the doctrine of the Eucharist requires the body of Christ to be present in the bread of the mass, this is a particularly devastating point. As Leibniz writes: “one cannot say . . . why it is called the body of Christ rather than bread, to which it is similar in every respect.”⁷² Although Leibniz’s second argument is interspersed with the first (and less than perspicuous) he seems to offer a second devastating criticism of the Cartesian account of body. He notes: “the same thing is made by the whole and by a part, and the whole is equal to the part,” and moreover “the same thing is made by many different things.” Here the argument seems to be that since bodies are everywhere the same and since the identity of a body will be defined by its extension, it will be impossible to explain how the body, which occupies the place of the bread and which was a moment ago the substance of the bread, is now the substance of the body of Christ. That is, there will be no way to distinguish between the substance of the bread and the substance of Christ. Leibniz’s argument here seems to employ a version of the Reality Problem. He writes: “For a person who believes that the essence of a body consists in extension, how could it ever be believed that the body can be subject to another extension and preserve its substance?”⁷³ Because there are no “wholes” or real unities in mere extended stuff, there is neither a sub-

70. II i 128. 71. II i 170. 72. *Ibid.* 73. II i 171.

ject to underlie change nor a reality (or collection of realities) out of which to construct something real. In the end, “one cannot say . . . what is real in the Eucharist.”⁷⁴

It is significant that the criticisms Leibniz offers here against the Cartesian account of body are similar to the ones made in the letter to Oldenburg of September 1670. In the letter, Leibniz worried about the fact that on his account, the parts of the body were constantly changing and therefore lacked both a stable identity and a persistent reality. In the letter of November 1671, these are no longer difficulties for Leibniz’s position but only for “the moderns.” In fact, in the letter to Arnauld, Leibniz promotes his own account of the Eucharist as one that avoids just such problems. Indeed, according to Leibniz, he has been working on the metaphysics of the Eucharist for four years, but has only recently hit upon an explanation that satisfies him. Let’s put this new explanation in its proper developmental context. As I explained in chapter 2, Leibniz’s proposals about transubstantiation in 1668–69 rely on a notion of Idea which, as the substantial form of a non-human substance, is supposed to transubstantiate at the relevant moment. It follows from this account that the body qua matter remains the same while the Idea changes. In other words, Leibniz’s original explanation of the Eucharist faces exactly the problems described in the letter to Arnauld. To understand why Leibniz became dissatisfied with the earlier solution, and to grasp the full significance of the change in his views about the Eucharist, we need to remind ourselves of some of the issues surrounding the debate.

As noted in chapter 2, section 2, one point of contention between the Catholics and Protestants was the Catholic commitment to transubstantiation. In *The Babylonian Captivity of the Church*, Luther argues against the Catholics. He insists that “Transubstantiation . . . must be considered as an invention of human reason, since it is based neither on Scripture nor sound reasoning.” Moreover, Luther suggests that the Catholic position is inconsistent: on the one hand, Catholics maintain that the body of Christ can exist alongside the accidents of the bread; on the other, they assert that the substance of the body cannot exist alongside the substance of the bread. Luther proposes that in the same way the substances of fire and iron are intermingled as “red-hot iron [*ferro ignito*],” so the substance of the body of Christ is able to exist alongside the substance of the bread.⁷⁵ For someone like Leibniz who wanted to reconcile the churches, there were therefore two goals: first, to show that transubstantiation need not conflict with sound reasoning; second, to offer an account of the Eucharist that was consistent with the claims made by both the Catholics and the Lutherans. The point of Leibniz’s essay, *On transubstantiation*, was to give a coherent account of the metaphysics of the Catholic doctrine and thereby to accomplish the first

74. II i 170.

75. Henry Bettenson, ed. *Documents of the Christian Church*, 280. I would like to thank Charlotte Methuen who discussed these theological points with me.

goal. This Leibniz did to his satisfaction. But he does not even attempt to achieve the second goal. Because during 1668–69, Leibniz was at the height of his interest in this theological project, it is odd that he does not undertake a more complete explanation of the Eucharist during this period. The letter to Arnould explains why: Leibniz’s theory of substance at the time could not have accomplished the second goal exactly because it contained the problematic notion of material passivity.

Let’s be more precise. According to the official pronouncement of the Council of Trent:

Since Christ our Redeemer said that that which he offered under the appearance of bread was truly his body, it has therefore always been held in the Church of God, and this holy Synod now declares anew, that through consecration of the bread and wine there comes about a conversion of the whole substance of the bread into the substance of the body of Christ our Lord, and of the whole substance of the wine into the substance of his blood. And this conversion is by the Holy Catholic Church conveniently and properly called transubstantiation.⁷⁶

Moreover, in the *Canons on the Holy Eucharist*, the Council writes: “in the venerable sacrament of the Eucharist the whole Christ is contained under each appearance and in each separate part of each appearance [species].” As the theologians proclaim, “if anyone denies” this account, “let him be anathema.”⁷⁷ According to the Catholic doctrine, the substance of the bread is transubstantiated into the body of Christ, and moreover the body of Christ is contained under each appearance. What Luther finds odd is that the Catholics allow that the substance of Christ exists alongside the accidents of the bread and yet deny that the substance of Christ can exist alongside the substance of the bread. For Luther and orthodox Lutherans, Christ is literally present in the bread and wine. As the doctrine is presented in the official *Augsburg Confession* of 1531: “the body and the blood of Christ are truly present, and are distributed to those that partake in the Lord’s Supper.”⁷⁸ Although some Lutherans interpreted this presence as a spiritual and not a physical one, Leibniz was keen to explain the physical presence of the body of Christ.

These theological facts help to explain the importance of the shift between the views in *On transubstantiation* and those in the letter to Arnould. In the former, Leibniz does not try to show how the same body can be in many places at the same time; in the latter, he does. That is, in November 1671, Leibniz is prepared to explain how the *body* of Christ can be in sev-

76. Council of Trent, Session XIII (October 1555), ch. 4: Bettenson, *Documents*, 370.

77. Bettenson, 370.

78. Bettenson, 298. The *Augsburg Confession* of 1531 consists of twenty-eight articles that were written by Philipp Melancthon and that set forth Lutheran doctrine. Of particular importance here is the doctrine of real presence according to which the body of Christ is really present in the Eucharist. Thus, the Lutheran doctrine does not go as far as the Catholic one of transubstantiation, which asserts that the substance of the bread is *replaced* by the substance of Christ.

eral places at the same time. He gives Arnauld a description of the development of his new position:

I understood that the essence of body does not consist in extension (as Descartes thought) . . . , but in motion and therefore that the substance of a body or [seu] nature, by all means consistent with the definition of Aristotle, is the principle of motion (for there is no absolute rest in bodies); moreover [I understood that] the principle of motion or [seu] the substance of a body lacks extension.

In short, Leibniz came to realize that the substance, nature, or essence of body just is its principle of motion or activity and therefore that the substance, nature, or essence of body lacks extension. Leibniz continues:

Not until then was it most clearly apparent how substance differed from appearances and in particular that there is a *ratio* in terms of which God is able to be understood clearly and distinctly to bring it about that the substance of the same body is in many different places or, what is the same thing, under many appearances [sub multis speciebus].⁷⁹

In the next chapter, I will use this passage as evidence for Leibniz's acceptance of Preestablished Harmony in the second half of 1671. For our purposes now, it is especially important to identify the dramatic difference between Leibniz's new account of the Eucharist and his earlier one. Both in the letter to Arnauld and in *On transubstantiation*, the substance of the body of Christ can be in different places at the same time. The point of *On transubstantiation* applies with equal force in the letter to Arnauld: because the principle of activity of Christ is not in space, it is able to act on different passive principles at the same time. The dramatic difference between the earlier and later account of the Eucharist is that the latter lacks the complicating factor of material passivity. According to the doctrinal demands, the appearances must remain the same, and therefore, on the earlier view, there could be no change of body: since the organized extended matter was supposed to *cause* the appearances of the bread, the body or organized matter had to remain unchanged as well. In the new conception, since the bread just is a collection of mind-like substances (and, as I will argue in chapter 8, since the body of the bread is not the cause of the appearances), there is no longer a problem in replacing it with the body of Christ. As Leibniz proudly proclaims to Arnauld: "For I will also show what no one has previously thought, [namely,] that in the ultimate analysis *Transubstantiation and real multipresence* do not differ. . . . And consequently Transubstantiation, as most cautiously expressed in the phrase by the Council of Trent, and [which] has been illustrated by me based on Saint Thomas, does not contradict the Augsburg Confession; indeed it follows from it."⁸⁰ We will not be able to unpack the full force of this passage until the next chapter. In particular, two questions have to be answered: how exactly does the body of Christ become present in the bread and how exactly does Leibniz's answer to that question entail transubstantiation? What is important to understand

79. II i 175. 80. Ibid.

now is that when Leibniz boasts that he will do what no one has done before, he is asserting that he can show how a single *body* can be in different places at the same time. That is, he is not just claiming the multipresence of the same substance, he is claiming the multipresence of the same body. That Leibniz thinks he can explain how the same body (say, the blood of Christ) is able to be in many different places at the same time bears witness to a major change in his views since *On transubstantiation*. In the earlier view, the substance in the bread is removed and replaced by the substance of Christ, whose active principle is thereby present in the bread. But this does not get the *body* of Christ into the bread. Because the body of Christ contains a passive principle, the body will not be in the bread unless the passive principle is. Since, according to the Original Theory of Corporeal Substance, the passive principle is extended matter, it was impossible for the body of Christ to be in more than one place at the same time. The reason that Leibniz is prepared to announce in 1671 that he has satisfied the requirements of the Augsburg Confession is that he has transformed body into the *kind* of thing that can be so scattered about. In 1671, Leibniz can easily satisfy the demands of the Augsburg Confession that both the body of Christ and the body of the bread be present. By reducing body to a collection of mind-like substances, the body of Christ can be in many different places at the same time *and* be present alongside the body of the bread.

My final reason for believing that by the winter of 1670–71, Leibniz has replaced material passivity with panorganic vitalism concerns the definition of body that he offers throughout the period. Sometimes he defines a body as a momentary or “instantaneous mind.”⁸¹ Sometimes he claims that the essence of body is motion. As he writes to Arnauld in November 1671: “the essence of body does not consist in extension . . . rather the essence of body consists in motion.” The underlying assumption is that motion is the activity of body that itself arises from a momentary mind. As Leibniz continues in the letter to Arnauld, “the philosophy of motion is a step toward the science of mind.”⁸² The basic assumption here is that what is entirely passive does not exist except as a state of mind. In the letter to Johann Friedrich May 1671, he explains: “Neither will it be possible to explain what Existence is nor will it be possible to explain how Existence corresponds to anything unless a Mind is supposed.” What Leibniz suggests here and elsewhere is that something exists if and only if it is a mind-like being or a state of such a being.⁸³ In the next chapter, I will offer significant evidence that by the summer of 1671, Leibniz is committed to the view that the perceptions of minds arise from the minds themselves and that those perceptions perfectly parallel the underlying activities of real mind-like substances. My claim now is that Leibniz’s definition of body during our period is consistent with his attempt to explain all corporeal features in terms of the activities of mind-like substances and to remove material passivity from the created world.

81. II i 102. 82. II i 172; L 148; see also II i 162. 83. II i 114; see also VI ii 280.

I have offered a number of reasons for believing that by the winter of 1670-71, Leibniz had rejected the reality of inert passive matter and replaced it with a passive principle constituted of mind-like substances in panorganic collections. In chapter 8, I will present the details of how minds are supposed to form a corporeal substance and how they are supposed to communicate. Before turning to this material, it is appropriate to discuss the two most obvious problems facing my claim that prior to his departure for Paris Leibniz did *not* reject the reality of extended passive matter.

First, in the period 1670-72 (and indeed throughout the 1670s), Leibniz's views about cohesion, continuity, motion, and matter are in flux. He tries out positions, rejects them, and then picks them up again. His physics is not yet stable, nor will it be so for some time. The very different explanations promulgated between 1671 and 1676 for the movement of bodies offer a striking example of the inconstancy of his physical views. Sometimes he insists that vacua are necessary to explain movement; sometimes not. Sometimes he declares that there are very different kinds of bodies; mostly he does not. In the *Hypothesis of the system of the world* of 1671, for example, vacua are necessary to explain "the action of one body on another,"⁸⁴ and Leibniz proposes a complicated physical scheme in which there are minds, vacua, and three grades of bodies. It is striking that in this text written soon after the *New Physical Hypothesis*, he claims that the most fundamental of these bodies are atoms, which are themselves invariable and indestructible.⁸⁵ In *On prime matter* of 1671, however, there are no atoms: "*matter is actually divided into an infinity of parts. There are in any given body an infinity of creatures. All bodies cohere within themselves. Certainly all are divisible from the others, but not without resistance. There are no Atoms, or bodies whose parts are never divisible.*"⁸⁶ Sometimes during the period, he relies on vortices and circular motion to explain cohesion; sometimes he does not. In a letter of May 1671, he writes: "I will expose the *ratio* as to how God can make a body which is produced by motions of a certain sort so that it is naturally indissoluble with no continuity of special concurrences, even if all strengths in the world join together." The *ratio* here includes matter "on which a mind has been grafted" and a mind that propagates itself.⁸⁷ In an essay of 1672, entitled *On the nature of things*, Leibniz emphasizes that the basic elements in nature are worlds with vacua between them.⁸⁸

Such frequent changes in ideas about the constituents of reality suggest that Leibniz's entire system is in flux. The fact that Leibniz's account of body, motion, and the problems of continuity vary throughout the 1670s has inclined most scholars to believe that he had no developed philosophy during the period. While I fully admit that Leibniz was not absolutely secure

84. VI ii 293. 85. VI ii 294, 298.

86. VI ii 280: W 91. The Latin of the last sentences is: *Omnia corpora inter se cohaerent. Distrahuntur quidem omnia ab omnibus, sed non sine renisu. Nullae sunt Atomī, seu corpora quorum partes nunquam distrahuntur.* Leibniz's emphasis.

87. II i 97. 88. See VI ii 304-06.

in his metaphysics in 1671 and that he continued to think and rethink his views, it remains true that from that time forward, the basic features of his system never came under genuine doubt. In chapters 8 and 9, I trace the further articulation of some of his doctrines in 1671, and in chapter 10, I show how he tinkered with the details of his metaphysics during the Paris years. But as a thorough survey of the texts make clear, he remained committed to his Aristotelian and Platonist assumptions and the general structure of what I have called his Second Theory of Corporeal Substance. In short, while he continued to work and rework the interconnections among his ideas and think through their implications, he never wavered from the core features of the metaphysics that he developed between late 1670 and early 1672.

But it is important to emphasize that my interpretative stance is perfectly consistent with Leibniz's continued bewilderment about important matters in physics. According to the interpretation offered here, in the winter of 1670–71, Leibniz decided to transform the passive principle in nature into an infinity of mind-like substances. I have argued that Leibniz's newly developed principle solved the most severe problems which faced his earlier position and which are primarily metaphysical. I also noted that Leibniz was apparently satisfied with his solution to the Problem of Cohesion. But he would not be for long. In fact, for several years after 1671, Leibniz worked very hard to resolve this and other difficulties related to the continuum. Many of the changes in his physical proposals are motivated by the desire to find an adequate resolution to these difficulties. That Leibniz continued to think of these problems as labyrinthine bears witness to the extreme difficulty he had in solving them. Despite his continued uncertainty about the Problem of Cohesion and despite his varied attempts to solve the problem, the texts composed between 1671 and 1676 make it clear that each of these accounts is consistent with the notion of panorganic vitalism articulated here. Sometimes the mind-like substances that constitute the passive principle in nature are indivisible but variable; sometimes they are indivisible and invariable; sometimes they are accompanied by vacua; and sometimes they float in a plenum. They are given different names (e.g., *bullae* and *terrellae*) and different explanations (e.g., they are the result of vortices) and sometimes they are sorted into different kinds (e.g., different sorts of atoms). But despite the almost constantly changing details, the mind-like substances are fundamentally the substantial unities in nature in terms of which corporeal things are explained. That is, none of these shifts in Leibniz's views, either about motion or about the details of cohesion, had any significant bearing on his metaphysics.⁸⁹ I propose that Leibniz was clever enough to develop a metaphysics that was consistent with all the most likely physical options and, moreover, that as his physical views developed (e.g., his notion of force), they sat neatly on those metaphysical foundations. In

89. For a different approach to some of the questions discussed here, see Catherine Wilson's interesting paper, "Atoms, Minds and Vortices in *De summa rerum*."

sum, Leibniz was smart and lucky: with remarkable skill he constructed a metaphysics in 1670–72 whose core features did not change dramatically over the years despite the fact that he continued to struggle with a number of extremely difficult problems. In the end, he developed solutions that were perfectly consistent with the notion of passivity proposed here.

The second problem that faces the account of passivity for which I have argued in this chapter is that it appears to contradict some of Leibniz's own comments about his philosophical evolution. There is a much cited passage from *A New System of the Nature and Communication of Substances* of 1695 in which Leibniz describes his philosophical development:

In the beginning, when I had freed myself from the yoke of Aristotle, I accepted the void and atoms, for they best satisfy the imagination. But on recovering from that after deep meditation [après bien des meditations], I perceived that it is impossible to find the *principles of a true unity* in matter alone, or in what is only passive since everything in it is only a collection or aggregation of parts to infinity. Now, a multitude can derive its reality only from true unities, which have some other origin. . . . Therefore, in order to find these *real entities*, I was forced to have recourse to a formal atom, since a material thing cannot be both material and, at the same time perfectly indivisible, that is, endowed with a true unity.⁹⁰

Scholars have used this passage as evidence that at some point during the 1660s Leibniz accepted Gassendian atomism. According to some commentators, the young Leibniz accepted a conception of material atoms which he abandoned by the time of the *Theory of Abstract Motion* and the *New Physical Hypothesis* of 1671.⁹¹ According to others, Leibniz flirted with material atomism in the 1660s and 1670s.⁹² In my account of his philosophical development during the 1660s, I have argued that Leibniz considered a number of mechanical options, but I also claimed that throughout the period, he clung tenaciously to an Aristotelian theory of substance. For Leibniz, there can be neither unity nor motion in a created thing unless it is caused by a mind-like active principle, whether finite or infinite. On the other hand, for Gassendi, atoms are material and yet have unity and motion.⁹³ Therefore, if scholars are accurate in asserting that Leibniz accepted Gassendian atomism during any part of the 1660s or 1670s, then it follows that at least part of my story about Leibniz's development is inaccurate.

Fortunately for my interpretation, there appears to be no textual evidence that Leibniz ever seriously considered material atomism. Not only did Leibniz not embrace Gassendian atomism in the 1660s, he criticized it frequently both in letters and in published texts.⁹⁴ As he proclaims in the *New*

90. G IV 478: AG 139/L 454.

91. See, e.g., Brown, *Leibniz*, sect. 3.2; Rescher, *Leibniz: An Introduction to his Philosophy*, 7; Capek, "Leibniz on Matter and Memory," 80–81; Belaval, *Initiation*, 33–37.

92. See, e.g., Arthur, *Labyrinth*, Introduction, sect. 5.

93. I noted in ch. 3 that according to Gassendi, atoms are "infused" with motion by God (see n. 25). As I also said there, the idea of a wholly material thing with motion as a fundamental property is a violation of the Principle of Causal Self-Sufficiency.

94. In the *Confession of nature against the atheists* of 1668, Leibniz is adamant about his op-

Physical Hypothesis of 1671: “I have *always* believed that whatever may be said about various figures of atoms, . . . about hooks, crooks, globules . . . is too far removed from the simplicity of nature and completely removed from experiments, or is too inadequate to be connected in any obvious way with the phenomena.”⁹⁵ Thus, when Leibniz writes in the 1690s that he was seduced by atoms and the void, he does not mean material atoms. As recent scholars have rightly noted, Leibniz’s *A New System of the Nature and Communication of Substances* was written primarily for a Cartesian audience.⁹⁶ The full force of Leibniz’s comments about his metaphysical mistakes will be missed if we read this part of his intellectual autobiography as focused primarily on Gassendian atoms. Although Leibniz’s criticisms are explicitly directed at atomism, they apply to any account of substance that has extended matter as a component. That is, *A New System of Nature* is rhetorically clever and nicely exemplifies the Rhetoric of Attraction that I attributed to Leibniz in chapter 1. In the text, he describes a metaphysical option that is both an accurate description of his own published views about substance (e.g., the view in the preface to his edition of Nizolio⁹⁷) and a description general enough to apply to many of his readers. What he intends to suggest in the passage just quoted is that severe problems face any account that defines the basic constituents of nature in terms of arrangements of inert stuff. Once we recognize that Leibniz’s criticisms apply to his Original Theory of (non-human) Corporeal Substance and to Cartesian corporeal substance as powerfully as they apply to material atomism, we can discern the rhetorical subtlety of this passage.

Moreover, when we combine the textual evidence of the 1660s with the quotation, we discover strong support for my account of Leibniz’s philosophical development. First, as I noted in chapter 2, he freed himself from the Aristotelian model of physical explanation in favor of the mechanical one. At this point, the position that so satisfied his imagination was not the material atoms of Gassendi but his own Original Theory of Corporeal Substance, according to which a non-human corporeal substance is constituted of material passivity and an active principle. In *On transubstantiation*, for example, the bread and wine of the Eucharist are supposed to be corporeal substances. That is, according to the Original Theory of Corporeal Substance, anything that has an organized corporeal nature has an organizing

position to the atoms of Gassendi and others. See VI i 492: L 112. In one of his first letters to Oldenburg, Leibniz criticizes Gassendi’s account of the cohesion within material atoms. See II i 63.

95. VI ii 248; my emphasis.

96. See, e.g., Brown, “Leibniz’s ‘New System’ Strategy” and Rutherford, “Demonstration and Reconciliation: The Eclipse of the Geometrical Method in Leibniz’s Philosophy,” esp. 184.

97. As noted in ch. 3, n. 1, the edition that Leibniz did of Nizolio’s text was published in 1670 and under a slightly different title again in 1674. For our purposes here, it is important that in the published letter to Thomasius, Leibniz says that “neither a vacuum nor plenum is necessary,” he disagrees with Aristotle’s denial of *vacua* (VI ii 434: L 94), and he states that “when the parts are pulled apart . . . a vacuum is left” (VI ii 435: L 96).

active principle and is therefore a substance. As we will see in chapter 10, beginning in the Paris period, Leibniz is often inclined to describe a corporeal substance as an atom, where the point is that it is indivisible though not invariable. Once we apply this later terminology to the period 1669–70, it would seem to follow that every corporeal substance is an atom; surely, the core of a substance is. Although Leibniz is undecided about vacua during the period, he sometimes suggests that they exist, and he importantly does so in his published letter to Thomasius.⁹⁸ Therefore, at moments during the period 1666–70, Leibniz was committed to the existence of vacua and to substantial atoms, where the latter are constituted of an active principle and passive extended stuff. Moreover, the next section of the passage from the *A New System of Nature* neatly conforms to a major part of the interpretative story offered here. As noted above, it was primarily the Reality Problem that drove Leibniz to reject material passivity. He realized that “a multitude can derive its reality only from true unities,” and moreover that there will be no true unities either in anything passive or – what is the same thing – in what is wholly material. In other words, Leibniz was led to reject his original theory of material passivity and accept his new notion for exactly the reasons given here: he came to see that there is no real unity in inert material stuff because any such stuff, regardless of its organization, “is only a collection or aggregation of parts to infinity,” and he sought true unity in “some other origin.” What origin was that? As Leibniz writes just after the quotation: “Hence, it was necessary to restore, and, as it were to rehabilitate the *substantial forms* which are in such disrepute today, but in a way that would render them intelligible.” According to Leibniz, these substantial forms must be conceived “on the model of the notion that we have of souls” and “contain . . . an original *activity*.”⁹⁹ There is nothing in this passage that conflicts with anything in the developmental story that I offer.¹⁰⁰

98. E.g., in *A New Method for the Learning and Teaching of Jurisprudence* of 1667. See VI i 287: L 90.

99. G IV 479; AG 139. Leibniz also notes the next major step that he made in the development of his conception of substance, one that we will mention in the next chapter, namely, that of force.

100. Nor do the other passages that the mature Leibniz wrote about his early years and that are sometimes given to support his early material atomism conflict with my account once we realize that the atoms under discussion are substantial atoms. For example, in a passage brought to my attention by Richard Arthur, Leibniz writes: “There is a great difference between my old opinions, which were pleasing to an adolescent, and those of which I approve now that I am more mature. At first, when I had wandered out of the prickly thornbrakes of the scholars into the pleasanter pastures of the more recent philosophy, I was extremely taken by the flattering ease with which things could be understood, through which it seems that everything that had previously been shrouded in darkness could be comprehended by lucid imagination. Thus after deliberating on this long and hard, I came to condemn forms and qualities in material things, and reduced everything to purely mathematical principles. . . . But although when I became a Geometer I relinquished these opinions [e.g., about points in the continuum], atoms and vacua held out for a long time.” While this is not a wholly accurate account of Leibniz’s development in that it leaves out some of the twists and turns in the evolution of his thought, the

In this chapter, I have argued for the three-part conclusion that by the winter of 1670–71, Leibniz has decided to reject the reality of inert extended matter, to conceive the passive principle in corporeal substance as a collection of mind-like substances, and to describe the interrelations among the latter in panorganic terms. According to the story told here, Leibniz became increasingly troubled in 1670 by a number of topics related to material passivity. By December of the year, he had decided that he could avoid these difficulties by ridding reality of inert matter. As early as the winter of 1670–71 he was prepared to conceive the passive principle in corporeal substance as a collection of mind-like substances. Despite this genuinely radical shift in Leibniz’s views, the general outline of his *Metaphysics of Substance* remains unchanged. The world continues to be constituted of corporeal substances, each of which has a nature constituted of a union forged out of active and passive principles. Although the passive principle contains nothing genuinely material, it nonetheless functions as the passive principle within substance. In brief, the account of substance here is perfectly consistent with the Second Theory of Corporeal Substance, according to which the nature of a corporeal substance S is constituted of a mind-like substantial form F that acts constantly so as to organize and create a unity with its passive principle P.¹⁰¹ The only difference between Leibniz’s views before and after the transformation in the winter of 1670–71 is that the passive principle has been redefined and Leibniz has invented the idea of a core of substance. Whereas before there was just an active principle acting constantly on its inert passive stuff, by late 1670 there is a core of substance that connects the active principle to the passive, where the latter is a panorganic collection of vital substances. In brief, among the various principles and assumptions that I have attributed to Leibniz, only the following requires revision:

- The (early 1671) *Passive Principle Assumption* claims that, for every passive principle P that forms a unity with a mind-like substantial form F, P consists in a panorganic collection of substances, each of which is itself constituted of a substantial form and passive principle, and so on *in infinitum* and, moreover, the identity of P is determined by the dominant minds or substantial forms of the corporeal substances in P so that the core of substance that results from the unity of F and P is such that P is F’s instrument of acting.¹⁰²

salient features of the story conform to the one offered here: Leibniz rejected the scholastic explanatory model in physics (based on “occult” forms and qualities), embraced the mechanical explanatory model (based primarily on a geometrical analysis of extended matter), and then tended to rely on (substantial) atoms and vacua in order to explain corporeal features.

101. For a full account of the Second Theory of Corporeal Substance, see the conclusion of ch. 4.

102. See the Appendix II, ch. 4 for earlier versions of the assumption.

In the next two chapters, I will explain exactly how this collection of mind-like substances performs all the tasks assigned to the passive principle in corporeal substances. During the spring of 1671, Leibniz constructed a theory of Metaphysical Cohesion that maintained the structure of his Second Theory of Corporeal Substance and accommodated this newly constructed passive principle. As we will see in the next chapters, the result is Preestablished Harmony.

Phenomenalism and Preestablished Harmony, 1671

Sometime between May and November of 1671, Leibniz invented Pre-established Harmony. It did not come to him suddenly as the ultimate truth in metaphysics; rather, it grew gradually out of his attempt to solve the theological and philosophical problems that most interested him. As he reflected on topics in ethics, law, theology, physics, and metaphysics, he used materials from his *Metaphysics of Substance* and *Metaphysics of Divinity* to compose solutions to the prominent problems that arose. Preestablished Harmony resulted from the convergence of these solutions. This elaborate metaphysical doctrine was the most elegant way to solve a diverse group of difficult problems, to capture the rationality and goodness of God, and to combine ancient and modern ideas. Obviously there are no passages in which Leibniz is both clear and explicit about this weighty metaphysical commitment: if there were such texts, then scholars would have recognized its early development long ago. But when a thorough survey of the writings of 1671 is made within the context of the sundry problems that concerned him, there emerges convincing evidence that by the end of 1671, Leibniz had accepted the doctrine.

In 1671, Leibniz wrote a number of letters to some of the most prominent intellectuals in Europe and several series of notes on topics as diverse as justice, resurrection, refraction, solidity, and the Trinity. Many of these texts are enormously difficult. In his letters, Leibniz sometimes puts his metaphysical cards on the table, but mostly only insinuates his views; in his personal notes, he often attempts to formulate his new ideas, but is rarely explicit about his underlying concerns. In fact, the writings of 1671 are very much like the texts of 1668–70 which were discussed in chapters 2, 3, and 4. Like the earlier writings, many of Leibniz's most interesting beliefs are the unspoken commitments behind his arguments, which emerge only after a good deal of textual analysis, although he is relatively explicit about his views when he discusses specific theological problems. It is in the theological contexts that he is prepared to give the most details and be the most explicit about the implications of his underlying beliefs. As in the earlier works, the pieces of the metaphysical puzzle are strewn across a number of texts. Leibniz's evolving metaphysics emerges from the writings of 1671 only if we take the widest possible textual scope and place them against their correct historical, theological, and philosophical background.

In the last chapter, I argued that by the winter of 1670–71, Leibniz had rejected the reality of extended inert matter and transformed the passive

principle in nature into a collection of mind-like substances. With matter out of the picture, Leibniz faced the daunting task of explaining exactly how the fundamental realities of nature are related to one another and to our perceptions. It is by no means clear in what manner the extended and causally related objects that we perceive are supposed to correspond to the underlying unextended realities, nor is it obvious how those mind-like entities are themselves related. In this chapter, I show that once we piece together clues scattered across texts written between May 1671 and the beginning of 1672, it is possible to discern a commitment to (well-founded) phenomenalism and Preestablished Harmony. I postulate that Leibniz developed the original versions of these doctrines partly in response to his denial of the real extension of passive (primary) matter.

Before turning to the evidence for this conclusion, let's be perfectly clear about the presuppositions and implications of these doctrines. There are three preliminary points to emphasize. First, the *Metaphysics of Divinity* is presupposed by and helps to explain Preestablished Harmony. According to Leibniz's *Metaphysics of Divinity*, God emanates the (selected) divine essence to creatures, which stand in sympathetic union with one another and which are themselves inferior manifestations of God. It is important to recognize that Preestablished Harmony is a *version* of Emanative Harmony. It is an account of how the entirety of the created world and each creature in it can be seen to be a manifestation of the divine essence. The second point to emphasize is that, as I interpret it, Preestablished Harmony consists of two separate theses: the Complete-*Ratio* Theory of Substance, which claims that the complete *ratio* for all the states of an individual substance is contained in the nature of the substance; and (Strong) Parallelism, which maintains that although the substances do not causally interact with one another, their states correspond perfectly.¹ The third point to emphasize is that Preestablished Harmony is intimately related to a desire on Leibniz's part to save the phenomena while denying the reality of passive matter. As a theory, therefore, Preestablished Harmony is closely related to the development of Leibniz's phenomenalism.

The phenomenalism of the mature Leibniz, which is sometimes called "well-founded phenomenalism," has been interpreted to include three claims: bodies are phenomenal objects and our perceptions of them arise from our own internal nature; our perceptions nonetheless correspond to the activities of real (unextended and mind-like) substances and in that sense are "well-

1. In ch. 6, sect. 3, I presented the Speculative Creation Story and noted that its fourth part contains a version of parallelism. According to that version, the activity of one substance is perfectly coordinated with the activity of those substances with which it causally interacts. The mature doctrine (which I call (Strong) Parallelism) differs from the original version (which I called (Weak) Parallelism), so as to conform to the absence of intersubstantial interaction. It is noteworthy that the two versions are similar in that each substance has been prearranged by God to act in perfect coordination with all the substances in its causal purview. For more details about parallelism, see Appendix II, ch. 6.

founded;” and we are justified in doing physics, although the objects of our study are phenomenal objects.² For the sake of convenience, I will call the first of these claims *Complete-Ratio Phenomenalism*. The *Complete-Ratio* Theory of Substance entails *Complete-Ratio* Phenomenalism: if the complete *ratio* for all the states of a substance S is contained in its nature, then it follows that the complete *ratio* for its perceptual states are contained there as well. Moreover, I want to emphasize the fact that (Strong) Parallelism, when properly understood, entails the second of these claims, namely, that our perceptions of bodies correspond to the activities of real substances: if all the states of all substances are in perfect correspondence with one another, it follows that the perceptual states of a conscious substance will correspond to the states of mind-like substances and in that sense will be well-founded. This brings us to the intimate relation between Preestablished Harmony and phenomenalism. In the sections that follow, we will see that the development of Preestablished Harmony and *Complete-Ratio* Phenomenalism went hand-in-hand and that Leibniz’s conception of parallelism assumed the close correspondence between the perceptions of conscious minds and the activities of mind-like substances. It is important to understand that in a world constituted entirely of minds and their thoughts, *Complete-Ratio* Phenomenalism entails the *Complete-Ratio* Theory of Substance. Therefore, in a world constituted of minds and their thoughts, Preestablished Harmony is equivalent to the conjunction of *Complete-Ratio* Phenomenalism and (Strong) Parallelism.

In this chapter, I display some of the concerns that motivated the invention of Preestablished Harmony. In section 1, I investigate the problems that arose from Leibniz’s newly developed ideas in physics and theology and I exhibit texts that reveal a fundamental change in his thinking about the relation between the apparent and the real. In section 2, I analyze essays in which we observe Leibniz struggling to articulate the proper relation between our experiences of the world and the underlying realities. By the second half of 1671, these texts reveal a radical Platonist epistemology, an original version of *Complete-Ratio* Phenomenalism, and a commitment to the *Complete-Ratio* Theory of Substance. In section 3, I turn to the theory of Metaphysical Cohesion that Leibniz developed in the (late) spring of 1671 and explore its sophistication as a solution to the theological problems of the Eucharist and resurrection. I argue that the solution to both theological problems depends on a (Strong) Parallelism among substances. From the evidence displayed in sections 2 and 3, we can infer Leibniz’s early acceptance of Preestablished Harmony. Finally, in section 4, I summarize some of the changes that occurred in Leibniz’s metaphysical views between early and late 1671 and discuss the role that the Principle of Sufficient Reason might have played in these revisions.

2. See Adams, “Phenomenalism and Corporeal Substance in Leibniz” and *Leibniz*, ch. 9.

1. Gap between the apparent and the real

Between early 1670 and late 1671, Leibniz was developing his views on a number of topics. As his opinions in the areas of ethics, epistemology, and physics began to fall into place, he was more and more encouraged to think of the gap between the apparent and the real as unbridgeable. There were two distinct sources for his increasing concern about how to explain the relation between the sensory appearances of the perceiving mind and the underlying reality of things. In chapter 7, section 1, I identified some of the problems that arose in his work in physics (e.g., the Reality Problem and the Problem of Cohesion). In chapter 6, section 4, I suggested how his investigations in ethics encouraged him to think of the appearances of things as barriers on the road to knowledge and goodness. Emanative Harmony itself implies that the world is really consonant regardless of how dissonant it may appear, while the conception of a mind as a mirror entails that every human being is related to every other regardless of how parochial each may feel. Once the gulf between the apparent and the real has widened to this extent, two serious questions arise: what epistemological value can appearances have and what causal relation can there be between the real nature of things and the appearances? That Leibniz debated these topics quite seriously for several months is clear. It is also evident that he saw them as closely related since his discussion of one is almost always mingled with his analysis of the other. Although he offers no consistent answer to either question until the second half of 1671, from the essays written between early 1670 and late 1671, we can discern a developing set of responses. There is reason to believe that in May 1671, Leibniz decided to reconsider intersubstantial causation in general and the causal source of our sensory phenomena in particular. Let's consider the evidence for this claim.

From the time of the *Confession of nature against the atheists*, Leibniz was inclined to distinguish between the phenomena or the sensory qualities of things and the underlying physical natures that were supposed to cause them. The title of Part I of this 1668 essay is "*That a ratio of Corporeal phenomena cannot be rendered, without an incorporeal Principle, that is, God.*"³ In 1669, Leibniz makes the distinction in a dramatic fashion. It is in the letter to Thomasius of April 1669 that we find the first use of an image to which Leibniz will return throughout his philosophical career. Concerning the difference between an essence and its perceived qualities, he writes:

Just so, the same city presents one aspect if you look down upon it from a tower placed in its midst; this is as if you intuit the essence itself. The city appears otherwise if you approach it from without, which is as if you perceive [percipias] the qualities of a body. And just as the external aspect of a city varies as you approach it differently. . . , the qualities of the body vary with the variety of our sense organs.

In section 2 of chapter 6, we noted a distinction between an essence as something conceived and as the nature of the thing from which its properties

3. VI i 489; L 109.

were said to flow or emanate. In the first sentence of our passage, Leibniz is concerned with the former where the idea is that a body has an essence that can be intuited. In the second sentence of the passage, he is concerned with the latter where the point is that the nature can be perceived through any one of its external aspects or qualities. From the context it is clear that the external aspect and the nature are closely related in the sense that a change in the one implies a change in the other. Leibniz asserts: "Now if the qualities are changed . . . , the substance will also be changed."⁴

By late 1671, the same image is used to make a different point. In the letter to Arnauld of November 1671, it exemplifies the radical distinction between the appearance and substance of the Eucharistic bread. Leibniz tells Arnauld that "the substantial form differs from the qualities" of a substance like "the true nature [figura] of a city, when seen from a tower in its midst, [differs] from the infinite variations which appear," such as when the town "is seen" from "an area on the outside" of the town.⁵ Here the emphasis is on the difference between the substance or nature and the appearances: the appearances of the bread remain the same while its nature or substance is radically altered. In a pair of essays written in the second half of 1671, the image is used to the same effect. According to Leibniz, in these essays, entitled *An example of demonstrations about the nature of corporeal things, drawn from phenomena*, his goal is to obtain sound conclusions about perfection, happiness, God, and mind;⁶ his method, which he considers to be innovative, is to assume "nothing except what might be deduced from what is known on the basis of perception [sensu]."⁷ In these essays, Leibniz distinguishes clearly between the nature of a thing and its appearance and he explores what can be known about the nature on the basis of its appearance. He explains that a thing is "that which appears [apparet]" whereas "[t]he Nature of the thing is the cause [causa], in the thing itself, of its appearances [apparentia]." With this distinction clearly drawn, Leibniz announces: "Hence the Nature of a Thing differs from its Phenomena as a distinct appearance [differs] from a confused one."⁸ Leibniz's suggestion in *An example of demonstrations about the nature of corporeal things, drawn from phenomena* is that the nature of the thing is not grasped from the "outside," although it is somehow related to its "appearances." In an attempt to explain more fully the relation between the nature and the appearance, Leibniz returns to the image of a town. He claims that the nature differs from the appearance:

like a plan of a town, looked down upon from the top of a great tower placed upright in its midst differs from the almost infinite horizontal perspectives with which it delights the eyes of travelers who approach it from one direction or another. This analogy has always seemed excellently fitted for understanding the distinction between nature and accidents.⁹

Let's be clear. All the uses of the analogy have two points in common: they all distinguish between the nature of a corporeal substance and the ap-

4. VI ii 437: L 97 5. II i 170. 6. VI ii 305-06.
7. VI ii 302. 8. VI ii 303: L 142. 9. VI ii 304: L 142.

pearance of it; and yet they all maintain that there is a relation between the nature and the appearance. The point to emphasize here is that in 1670–71 Leibniz began to rethink the status of that relation. Whereas in the letter to Thomasius of April 1669, the relation between the nature and the appearance is such that a change in the one is reflected in a change in the other, by the end of 1671 the close causal connection between the two has been severed. In the later versions of the analogy, there is a nearly infinite number of appearances which can be seen by “the eyes of travelers,” and where each of these appearances seems only distantly related to the nature.¹⁰ This shift in the use of the town image implies that something happened between the published letter to Thomasius of April 1669 and the letter to Arnauld of November 1671 to convince Leibniz to reconsider the relation between the appearance and the reality of things. I would now like to propose two separate motivations for Leibniz’s change of mind.

According to Leibniz’s original *Metaphysics of Substance*, the world is populated by individual corporeal substances whose natures are composed of a passive principle and an organizing principle of activity. In the April 1669 letter to Thomasius in which we find the first use of the town analogy, there is in theory a precise causal story to tell about how the nature of a substance – whether a chimpanzee or kitchen table – interacts with the nature of the perceiver to produce the appearances. By the September 1670 letter to Oldenburg, which we discussed at length in section 2 of chapter 7, a physical object like a kitchen table is no longer a single thing but an infinity of moving substances that momentarily constitute the nature of the object. As much as the kitchen table may look like a single object that persists through time, it is really a constantly changing collection of an infinity of creatures. As Leibniz puts it to Oldenburg: “And many things which seem to be one body are nothing but an accumulation of many bodies.”¹¹ Beginning in the fall of 1670, Leibniz was no longer prepared to believe that there was a straightforward causal story to tell about the relation between the appearance and the reality of an object. On the contrary, the nature of the corporeal object is not able to offer a neat explanation of its sensory qualities or appearances. As Leibniz suggests to Oldenburg, the very nature of such a quality (say, smoothness) is importantly different from the coordinated bits of matter that are supposed to cause it. The well-known idealist, George Berkeley makes a similar point some years later: “But how can that which is sensible be like that which is insensible? . . . I find it is impossible for me to conceive or understand how anything but an idea [that is, a sensory phenomenon] can be like an

10. VI ii 304: L 142. Later in this essay, entitled *Specimen of demonstration concerning the nature of corporeal things based on phenomena*, Leibniz suggests that the only means to knowledge is by turning inward in order to search for the Ideas “within.” After discussing Descartes’ argument for the existence of God based on “the Idea of God,” he agrees that “it proceeds from an Idea in our mind to the truth of things” in that “whatever the mind perceives within itself it perceives truly.” VI ii 306 L 144.

11. II i 63.

idea."¹² That Leibniz was committed in the autumn of 1670 to reexamining the relation between the apparent and the real is clear. As he proclaims to Oldenburg, we must learn more "about the principles and causes of the appearances of things."¹³ For someone committed to the Principle of Sufficient Reason, these problems must have seemed particularly troubling. The very dramatic difference between the real object (as a collection of an infinity of momentary mind-like substances) and the apparent one (as a relatively permanent object with a certain shape and color) must have cast doubt on the possibility of a complete explanation for the apparent object.

In 1671, Leibniz also had important theological reasons to distinguish sharply between the real and the apparent. There are two closely related points. First, at least since the time of Augustine, Christian philosophers have wrestled with the seemingly obvious fact that the world is full of chaos and evil. The basic question was how the omniscience and omnipotence of a perfectly good God could be made consistent with this worldly fact. Proposed solutions to the problem varied greatly, but most thinkers assumed a distinction between how the world appeared and how it really was. It was common for philosophers to say that underneath the apparent disorder and evil lay harmony and goodness. For most theists, there were three basic assumptions: the world was genuinely good despite appearances to the contrary; it was possible for human beings to struggle against their inferior natures, escape the world of appearances, and glimpse the truth; human goodness required a turning away from worldly appearances.¹⁴ Leibniz approaches the problem of evil for the first time in a systematic way in the essays of the *Elements of natural law*, written between the autumn of 1669 and the end of 1671. In these texts, he implies that beneath the apparent disorder of the world is a genuine beauty and harmony that human beings can come to know. In chapter 6, I attributed to Leibniz the theory of Emanative Harmony, according to which each creature is an instantiation of the same divine essence. This theory finds its first expression in the *Elements of natural law*. In fact, the whole point of Leibniz's ethics as outlined there is that the good person is one who escapes the world of appearances to contemplate the divinity in everything. In order to discover the unity beneath the diversity and the consonance within the dissonance, one must seek the realities beneath the appearances. In the course of these essays, the gap between the real and the apparent increases. By the end of 1671, to become acquainted with the real requires a thorough rejection of the apparent. For example, in an argument against the atheists who explain "the confusion of human affairs" by insisting that "the earth is ruled by unknown chance," he insists that in the same way pictures differ from globs of color and songs from discordant noises, so "the harmony of the world" differs from "the confusion of human affairs." According to Leibniz, for those who examine

12. Berkeley, *Three Dialogues between Hylas and Philonous*, 41–42.

13. II i 63. 14. See Romans 23:47.

the world more thoroughly, “to them the confusion of six thousand years (although not even this lacks its own harmony), when compared to eternity, will seem like a single dissonant beat, which when brought into consonance with the whole by the compensation of other dissonances, increases the admiration for the ruler who embraces the infinite.”¹⁵

But there was another theological reason for Leibniz to distinguish sharply between the apparent and the real. As Leibniz began to construct some of the details of his *Metaphysics of Divinity*, he had to compose a coherent story about how created substances, rooted as they were in the world of becoming, could contain the divine. In chapter 6, section 1, I also attributed to Leibniz a theory of Reflective Harmony according to which there is an interrelation among human minds that consists in the fact that each mind thinks or reflects all the others in such a way that a change in one is reflected by a change in another. According to the Creaturely Inferiority Complex, every product of the Supreme Being contains all the attributes that constitute the divine essence, though the product instantiates each of these attributes in a manner inferior to the way in which they exist in the Supreme Being. These Platonist assumptions imply that underneath the sensory world of becoming is a real world of divine-like human substances which both instantiate the divine essence and mirror all the other substances. In 1671, Leibniz was motivated to explain both how the underlying divine essence was related to our conscious perceptions of constantly changing things and how our Reflective Harmony was related to the parochialism of our individual existence.

A brief summary is in order. In 1670 and 1671, Leibniz was concerned with a number of problems which pertain to the distinction between the apparent and real, where the former are roughly the objects of perception and the latter the fundamental realities in nature. That the gap between the two widens for Leibniz during this period is clear. I suggested earlier that once the gap between the apparent and the real widens to this extent, two questions arise, namely, what epistemological value can the appearances have and what causal relation can there be between the appearances and the underlying realities? That the appearances of things do not get at the real becomes a leitmotif in Leibniz’s writings of 1671. Assuming that he has rejected the reality of extended inert matter, it is not surprising that he would emphasize the radical difference between the appearance and reality of things. Moreover, while his commitment to the theory of mind-like substances in the winter of 1670–71 forced him to explain the appearances in terms of such substances and their states, it also offered him a convenient way around the problem: the minds that had the appearances could easily cause them.

May 1671 is a pivotal moment in Leibniz’s intellectual development. Among other things, beginning that month, he proposes an argument whose point is that there is something rotten at the core of mechanical physics.¹⁶

15. VI i 485. For the Latin, see ch. 6, n. 27.

16. As we will see in section 3, the first hard evidence for Preestablished Harmony occurs in a letter of May.

The argument, which is misleadingly simple and which first occurs in a letter to Conring of May 1671,¹⁷ makes interesting use of the modern device of a clock. Leibniz's decision to build his argument around one of the more spectacular inventions of his era is clever. His general rhetorical point is that we should not let the breathtaking results of modern science seduce us into thinking that their findings are more important than they are. While science has made real breakthroughs in many areas of knowledge, it has not revealed the most important of truths. In particular, Leibniz hopes to show that the explanations which the mechanists offer of the phenomena are entirely inept. There is a particularly vivid instance of the argument in a note written in the second half of 1671. In this essay, in which Leibniz responds to criticisms of his *Schediasma*, he applauds the advances made by his contemporaries in describing the phenomena, especially the progress made in medicine and chemistry,¹⁸ but he adds that "the World Machine" of the mechanical philosophers "has conveyed little" about "the nature of things" and has made no advance in either "the art of living" or "human wisdom."¹⁹ According to Leibniz, the failure of the mechanical philosophy is due to the fact that the phenomena do not disclose "the innermost nature of things." That Leibniz uses an invention as important as a clock to make his point is striking: from the appearances of a clock, we "cannot reach . . . its innermost *ratio*" because "the same effect . . . can arise from various causes." Leibniz argues that in the same way a square can arise from the conjunction either of two triangles or of two rectangles, the appearances of things in the world can be explained by different means. No appearance or group of appearances can by themselves reveal the nature of their material causes.²⁰ By such means, Leibniz thinks that he has offered a penetrating criticism of the mechanical philosophy.

There are two points to make about Leibniz's argument. At the beginning of this chapter, I presented claims which have been taken to constitute Leibniz's mature doctrine of well-founded phenomenalism. Following my terminology, these are Complete-*Ratio* Phenomenalism, (Strong) Parallelism, and the view that physics studies the phenomenal objects. The first point to emphasize about the clock arguments of 1671 is that they assume that the mechanical physics treats phenomenal objects. The arguments acknowledge that it is entirely appropriate to do such science and even claim that helpful knowledge (especially in medicine and chemistry) has been acquired by such means. But Leibniz insists that physics concerns "the particular phenomena of bodies" and "conveys little" about the underlying realities.²¹

The second point to emphasize about these clock arguments is more complicated. In chapter 2, I explicated a criticism that Leibniz made against the mechanical philosophers in the *Confession of nature against the atheists*, and noted that although it fails miserably as an argument against his mechani-

17. II i 94. 18. VI ii 341. 19. VI ii 329.

20. VI ii 327-28. See also VI ii 394. 21. VI ii 343, 327.

cal opponents, it reveals one of Leibniz's deepest assumptions, namely, the Principle of Self-Sufficiency. A variation of the same point can be made about Leibniz's argument based on the clock. While it fails as a criticism against the standard mechanist, it exposes one of Leibniz's newest insights about the relation between appearances and reality. Let me explain. While the mechanical philosophers differed both about human physiology and about the constituents of reality (for example, whether there are atoms and vacua or aether and a plenum), they agreed that for any appearance or experience, there was in theory a causal story to tell about how those constituents caused the perceiver to have the experience. However, they did not believe that for a particular experience, there could be only one causal story. On the contrary, they believed that the phenomena by themselves do not disclose the underlying reality, nor did they demand that for any particular experience, there could be only one explanation. Once again, Leibniz's criticism of the mechanical philosophy is both inadequate as an argument against his opponents and revealing about some of his deepest concerns.

But let's be very clear about the radical nature of Leibniz's position. We are concerned here with the appearance, say, the shiny rectangular blueness, that a conscious mind has of the object, say, the kitchen table. While each mechanical philosopher believed that his or her version of mechanical physics in theory could explain the appearance, each would have agreed that the appearance was underdetermined by that theory. That is, for the standard mechanical philosopher, the same appearance could be caused by several equally plausible though mutually exclusive circumstances. For example, the shiny rectangular blueness might have been caused by the kitchen table, a cleverly constructed replica of the table, or a well-placed mirror image of it. As reasonable as the mechanical position may seem, Leibniz could agree to no such thing. Because he was committed to the Principle of Sufficient Reason and to the idea that every state in the world has a complete *ratio*, he demanded that for each and every appearance, there be a set of necessary and sufficient conditions for exactly why it and no other occurred. For Leibniz, the underdetermination of the mechanical theories was utterly unacceptable. One of the motivations behind Complete-*Ratio* Phenomenalism was his desire to construct a properly sufficient explanation for the phenomena.

The general moral to the story of this section is that in 1670–71, Leibniz perceived an increasingly wide gap between the apparent and the real. Even taken by themselves, the development of the clock argument and the shift in Leibniz's use of the town image make one thing clear: something significant happened between the letter to Thomasius of April 1669 and the letter to Arnauld of November 1671 to convince Leibniz that the appearances of things are radically different from the underlying substantial realities. I suggest that one of the main motivations behind Leibniz's Complete-*Ratio* Phenomenalism in particular and Preestablished Harmony in general was an attempt to anchor the appearances of things in the appropriate way, while maintaining a close correspondence among substances.

2. Thinking about Preestablished Harmony

In this section, I offer evidence that by the second half of 1671, Leibniz had invented Complete-*Ratio* Phenomenalism and the Complete-*Ratio* Theory of Substance. The notes and essays of the second half of the year reveal that in the summer or early autumn, Leibniz began to investigate more thoroughly than he previously had the relation between the sensory phenomena and the underlying realities. The results of Leibniz's investigations are dramatic: not only does he place the complete *ratio* for the sensory phenomena in the perceiving mind, he develops his account of mind and knowledge along related lines.

Between the spring of 1670 and the spring of 1671, Leibniz corresponded with some of the most powerful people in Europe. The most important of these letters summarize his intellectual achievements and frequently offer an account of his two-part *Schediasma*, namely, *Theory of Abstract Motion* and *New Physical Hypothesis*. In chapter 6, I discussed a few of the letters in detail and showed that they contain evidence that minds act through emanation, that substantial forms contain the ontological correlate of a complete concept, and that the proper objects of knowledge are the internal Ideas. In presenting the basic features of Leibniz's Platonist epistemology, I also noted in chapter 6 that the *Schediasma* and related physical works take the goal of science to be the discovery of the divinity in things. These same texts assume that the divine truths lie beyond the appearances. Two closely related features of the works of 1670 to 1671 are particularly relevant to us now. First, there is an apparent tension in Leibniz's claims about the place of sensory phenomena in the acquisition of knowledge. On the one hand, Leibniz insists that the goal of his philosophical enterprise – even in natural philosophy – is knowledge of God, the acquisition of which ultimately requires the rejection of the apparent; on the other hand, he proclaims that his own work in physics has aided in the pursuit of that knowledge. In the letters of the period, when Leibniz introduces or summarizes his physical work to a correspondent, he often proclaims that it is only a part of a grander philosophical project and that the most important part of that project is his work on theological and ethical topics. He expresses his general point succinctly in a letter of 1670 when he explains that he began his work on jurisprudence and ethics because he was more concerned to establish “the rule [regula] of the soul than the rule of moving bodies.”²² He insists that as important as his work in physics is, his primary concern has always been with the good of humanity and “peace of mind.”²³ In his letters and notes, Leibniz distances himself from those contemporary philosophers who focus on the “Great Machine” of nature, attend too much to the sensory appearances, and thereby lose sight of the true goal of physics, namely, knowledge of God.²⁴ At the same time, however, he proclaims that unlike most of his contemporaries, his work in physics has con-

22. II i 50. 23. II i 172; see similar comments at II i 74, 122

24. E.g., II i 74, 163

tributed to the “light of the true Philosophy”²⁵ and has aided us in our search for the “ultimate *Ratio* of things (i.e., God).”²⁶

The second feature of the texts of our period that is especially significant to us now should not come as a surprise: the works dating between spring 1670 and spring 1671 are almost entirely silent about the precise epistemological value of the phenomena. They offer no attempt to explain how the study of nature can contribute to an understanding of God given that knowledge of divine matters requires turning away from the sensory phenomena. The one exception occurs in a note written sometime between late 1669 and late 1670. In this text, entitled *On the power of persuasion, on dreaming and wakefulness*, Leibniz makes some remarks on the unconscious activities of mind and the relation between the phenomena and God. In his outline for the *Catholic demonstrations*, Leibniz included a list of topics which were supposed to be relevant to the immortality of the soul and which all have to do with the activity of mind. One of these topics, “the wonderful construction of dreams,”²⁷ is the subject of *On the power of persuasion, on dreaming and wakefulness*. In my discussion of the *Conspectus* in section 2 of chapter 6, I showed that for Leibniz, the immortality of the soul was closely tied to its active nature, where the assumption was that an active thing is naturally indestructible. The essay on dreams acknowledges the fundamental activity of mind and emphasizes the fact that we are conscious neither of the principles nor the mechanisms at work in mental activity. Leibniz writes:

There is one very remarkable thing in dreams, for which I believe no one is able to render a *ratio*, namely, the formation of visions by a spontaneous concurrence [concurso] carried out in a moment, more elegant than . . . in wakefulness. . . . I wish I could remember what marvelous discourses . . . I have read in dreams without my shaping them at all, just as if they had been composed and offered to my sight.²⁸

Leibniz concludes: “Therefore, it is necessary that there is some architectural and harmonious principle, I know not what, in our mind.”²⁹ Our mind, as the subject of such visions, is capable of producing elaborate objects for itself while the mental mechanism behind the production remains wholly hidden. We are conscious of the object but not of its source. Moreover, according to Leibniz in this essay, the objects of mind differ in the degree to which they reveal the nature of that source. He insists that waking appearances, as objects of the mind, differ from dreams in terms of their interconnections: whereas in dreams there are few connections among things, when we are awake we can grasp “by what *ratio* we have come to the present place and state, and we see the fitting connection between those things, which are appearing to us, and the preceding ones.”³⁰ According to Leibniz, the more we attend to the connections among waking experiences, the more we are able to discern the *ratio* behind them. He writes: “in dreaming there is no relation to the greatest of things [summam rerum]”; among waking appearances, “everything is di-

25. II i 59. 26. II i 79. See also II i 117, 122, 128.

27. VI i 495. 28. VI ii 277: L 114. 29. 29. VI ii 278: L 115. 30. VI ii 276: L 114.

rected, at least implicitly, toward the ultimate end.”³¹ Leibniz’s point seems to be that the appearances of waking experience (unlike those in dreams) help us to glimpse the unity and harmony among things and ultimately to recognize their end; in that sense, they are the first step to knowledge of “the greatest of things.”

A summary of *On the power of persuasion, on dreaming and wakefulness* will put its relevance to our present concerns in clearer focus. Leibniz was encouraged to write an essay on dreaming as part of his attempt to prove the immortality of the soul, where the basic assumption was that dreaming offers insight into the fundamental activity of mind. Given our present interest in the development of Complete-Ratio Phenomenalism, Leibniz’s analysis of dreaming implies three important points. First, Leibniz believes that mind has an “architectural and harmonious principle” of which we are unconscious and yet which is capable of producing elaborate objects for itself. In this way, the mind unconsciously offers materials to itself. It is important to recognize that such a “harmonious principle” seems different from the set of instructions that we attributed (in chapter 6, section 3) to the active principle in corporeal substances. The latter is the “special *ratio*” that instructs the mind or active principle on how to act. The new proposal about mind goes further and suggests that there is a principle in mind that offers up objects to itself. The second point in the essay that is particularly relevant to our concern here is that because waking appearances are connected to the “ultimate end” in a way that dreaming appearances are not, only the former offer a means to knowledge. Leibniz implies that the epistemological value of perceptions arises from their interconnection. That is, insofar as waking experiences are thoroughly connected, they display the organization and harmony that God emanates in the world. Finally, it is significant that Leibniz is utterly silent about the precise path from the appearances to God. Except for a provocative comment about the activity of mind, he offers no help on how to attain the knowledge that we seek. About mind, as the active thing in nature, he writes: “For there are many things which we know, but do not seek, because we do not attend to the acting thing. However, attention is nothing other than reflection.”³²

In the spring of 1671, Leibniz was in a difficult position. He was committed to his Second Theory of Corporeal Substance. He was convinced that the ultimate objects of knowledge were the Ideas and God, that the sen-

31. The Latin here, *summam rerum*, is ambiguous. In classical Latin, the phrase standardly referred to the universe as a whole. In response to Leibniz’s argument in the essay, Loemker translates the phrase as “the whole of things” (L 114). Within both the general context of Leibniz’s Platonism and the specific context of the argument of this essay, I think that it is more reasonable to read the Latin as referring to God, who is “the greatest of things.” Another reason to interpret the text in this way is that while he was in Paris it became very common for Leibniz to refer to God by such means. As we will see in ch. 10, the Academy editors have given a whole group of texts whose topics cluster around theological issues the title *De summam rerum*, where the reference is to God as creator.
32. VI ii 276: L 113.

sory phenomena had to be rejected in order to attain such knowledge, and that there had to be a complete *ratio* or sufficient condition for each phenomenon. He had widely broadcast in his *Schediasma* and in numerous letters that his physics helps lead to knowledge of God. As impressive as his proclamations must have seemed to his correspondents, he offers no precise explanation of how we are supposed to move from the phenomena to knowledge of “the ultimate *ratio* of things.” Nor does he offer an account of exactly what the phenomena are such that they need to be rejected or denied so that we might attain genuine knowledge. Against the background set in the last section, we can speculate that the reason behind his silence on such an important metaphysical and epistemological topic was that he had not yet decided what sort of an account to give. Nor is that all. By the spring of 1671, Leibniz had transformed the passive principle in nature into mind-like substances. Since the sensory phenomena were entirely unlike the underlying mind-like realities, the realities themselves could not offer any direct explanatory support. Given our concerns here, the point to emphasize is that in the spring of 1671, Leibniz had to construct a complete *ratio* for every phenomenon without the help of extended corporeal things, but in a way that was consistent with his theory of substance, his Platonist epistemology, and his Aristotelian assumptions.

It is also important to recognize how tightly Leibniz’s hands were tied: following his Aristotelian assumptions, the cause and explanation of the perceptions of a substance S had to be contained within the nature of S. That is, given the extreme difference between the appearances of extended corporeal things and the reality of panorganic collections of mind-like substances and given Leibniz’s Aristotelian assumptions, there was really only one plausible option for explaining sensory perceptions: Complete-*Ratio* Phenomenalism. It is important to be perfectly clear about this. Because of Leibniz’s denial of the existence of extended inert matter and because of his commitment to the Principle of Sufficient Reason, unless he had been prepared to reject the Principle of Causal Self-Sufficiency, he could not explain the phenomena from outside the perceiving mind and so he had to explain it from inside: given the Principle of Causal Self-Sufficiency, the cause of the perceptions in the mind had to be in the nature of S. Moreover, because of Leibniz’s commitment to Emanative Harmony, God somehow had to be intimately involved *in* the perceptions. Since Emanative Harmony entails that every creature is an instantiation of the divine essence, the perceptions of every created mind would somehow have to contain at least some instantiations of the (selected) divine essence. That is, every mind had to be the cause of its own perceptions, and yet those perceptions would somehow have to include all the instantiations of the (selected) divine essence within its prearranged perceptual purview. Furthermore, given Leibniz’s commitment to Reflective Harmony, at least among human minds, each human mind also had to include (at least) an unconscious awareness of the morally relevant states of all other human minds.

In the spring of 1671, Leibniz had his work cut out for him: he had to tell a coherent story about how a perceiving mind could be the cause of its own

perceptions, and he had to offer an account of how the phenomena could both contain God and (at least) the morally relevant states of other human minds. In the remainder of this section, we will see that in the second half of 1671, Leibniz found a way to accomplish these tasks. His investigations concerning these topics occur mostly in the context of an analysis of the epistemological value of the phenomena. I claimed in the last section that there are two questions that needed to be answered about the relation between the appearances and the nature of things, namely, how are the appearances of things supposed to have any epistemological value whatsoever, and how exactly are those appearances supposed to be causally related to the natures of things? Let's now turn to some of the writings of 1671 in search of Leibniz's answers to these questions. It is noteworthy that in the second half of the year, Leibniz was concerned to explore the epistemological role of the perceptions of mind.

Sixth note from the *Elements of natural law*

In chapter 6, I made much use of the early notes from the *Elements of natural law*. Not only do these essays contain Leibniz's first explicit comments about harmony and his original uses of the image of a mind as a mirror, they also offer evidence of his Platonist epistemology. For Leibniz's original attempt to explain the precise epistemological function of perceptions, I turn to the sixth (and last) of these notes, written in the summer or fall of 1671. In an attempt to explain how a (conscious) mind might be led to "the nature of things" through the contemplation of its own perceptions, Leibniz distinguishes between what is prior in time and prior in nature. He claims that if A is prior to B in time, then A is perceived before B, and moreover that "we come upon" what is prior in time "by perception [sensu]." If A is prior to B in nature, then the essence of A is thought before the essence of B; he writes that "we come upon" what is prior in essence "by thinking."³³ He uses the distinction between priority in nature and priority in time to imply a distinction between what conscious minds think or understand and what they perceive. The suggestion is that the perceptions can be a *means* to an understanding of the natures. He writes:

Whatever is *Prior in Nature* is not [prior] temporally, but is something that is able to be understood clearly before the other, not the other before it. In this way what is prior in Time is something that is able to be perceived before the other, but not the other before it. What is prior in nature is prior essentially, what is prior in time is prior in terms of existence.³⁴ We arrive at the essence by thinking, we arrive at the

33. VI i 483. The Latin here is *cogitatio*, which I have generally translated as 'thinking.' I will continue to do so here, but it should be emphasized that the English "to think" is slightly misleading. When Leibniz insists that A is "prior in thinking" to B, he probably means that A is *understood* before B.

34. In the *Conspetus*, Leibniz claims that God the father is prior in nature but not in time to the other persons of the Trinity. See VI i 496.

existence by perception. So the efficient [cause] is prior to the effect temporally, but the action is not prior to the passion unless in nature.³⁵

Leibniz clearly distinguishes here between thinking and perception, where the objects of the former are the essences that are prior in nature and the objects of the latter are the perceptions that are prior in time. According to Leibniz, in experiencing the world, what we come upon first are the objects of perception. These are prior “temporally” and “in terms of existence,” but they are not prior essentially. Rather, what is prior in nature is what is prior essentially and what we arrive at by thinking.

So far, so good. But at this point in the essay things become a bit tricky. Leibniz writes:

A *Cause* is a producing thing prior in nature to what is produced. There are producing things which are after the things produced. For an effect often produces a cause. When I say: given that there is A, then surely there is B; A is the thing *Producing*, B is the thing *Produced*.³⁶

This passage is not perspicuous. Given its grammar, the most obvious reading is as follows: a cause is a producing thing that occurs prior to the effect that it produces, and moreover sometimes an effect produces a cause. There are (at least) two reasons to reject this reading. First, in no other writings of the period does Leibniz offer any such account of causation. In fact, as we will see later, his theory of causation in related texts seems quite different from the one this reading entails. Second, the context of the passage is very clearly that of the activity and changes within a mind or thinking thing. Immediately before this passage, Leibniz offered definitions of the terms ‘thinking,’ ‘action,’ and ‘change,’ and immediately after the passage he discusses what is “*Prior in Nature*” (see previous quotation), where the crucial distinction is between what is prior in nature and prior in time. In this context, it seems reasonable to think that the point of the problematic passage is primarily to disclose the epistemological relation between a perception and its cause or nature. This epistemological point is difficult to discern in the essay because Leibniz uses the same verb to refer both to a causal and to an epistemological relation. He appears to play with the subtle ambiguity of the Latin verb *infero*, which means in this context to occasion, bring about, or produce. In the causal relation, A produces or occasions B in the sense that A leads to the existence of B; in the epistemological relation, A produces or occasions B in the sense that A leads to an understanding of B. An effect can lead to an understanding of its cause, and therefore the effect

35. VI i 483. The Latin is: *Natura prius est licet non tempore, quicquid ante alterum clare cogitari potest, non alterum ante ipsum. Quemadmodum Tempore prius est quicquid ante alterum sentiri potest, non alterum ante ipsum. Natura prius est essentiâ, tempore existentia. Cogitatione essentiali sensu existentiam metimur. Ita efficiens est tempore prius effecto, sed actio non est nisi natura prior passione.*

36. VI i 483. The Latin is: *Causa est inferens natura prius illato. Dantur inferentia illatis posteriora. Nam effectus saepe infert causam. Quando dico: si A est etiam B est, A est Inferens, B Illatum.*

can be said to produce or occasion its cause in the epistemological sense. Once the passage is seen in light of the distinction between the causal and epistemological relation, a different interpretation suggests itself: although a nature is prior in understanding to any perception it produces or occasions (in the causal sense), the perception is experienced prior to the nature. Therefore, the nature of “producing things are given after” the perception in that we will “arrive at” the nature after the perception. It is in this sense that the perception or effect produces the nature or cause: the effect or perception occasions an understanding of its cause.³⁷ A Leibnizian example may help to clarify the point. We experience the world before we experience God and in this sense the world is temporally prior to God, who nonetheless is prior in nature. Our relation to the Supreme Being is such that we will be led to an understanding of the divinity only once we have experienced the world. When our experience of the world has led us to contemplate its source, then what is prior temporally has occasioned an understanding of what is prior in nature. In the note under analysis, Leibniz intends to suggest that our relation to the essences and natures of things is analogous to our relation to God: we first experience the appearances and then we are able to understand the underlying natures.

I said above that there were two questions that needed to be answered about the relation between the perceptions and the nature of things, namely, how exactly are the perceptions supposed to have any epistemological value whatsoever, and how exactly are those perceptions supposed to be causally related to the natures of things? The implication of Leibniz’s sixth note from the *Elements of natural law* is that, for any perception and nature, the former can lead to an understanding of the latter, and moreover the latter is the cause of the former. Apparently, the epistemological value of an appearance is that it leads us to the thing that caused it. But how exactly is this supposed to work? We need to know more. For example, we need to know what the nature or essence is that is supposed to cause the perception, and how the perception can lead us to its cause. Leibniz’s sixth note offers some direct help with these matters. In describing real knowledge, he tells us exactly what an inner nature is. His account of knowledge is significant, and lends support to the epistemological reading of the passage quoted above. He writes:

The *Good* is what is sought by one who has real knowledge. . . . *To have real knowledge* is to know what things are able to act or to suffer. . . . [N]o one is able to have real knowledge of a single thing, unless he is most wise, that is [seu], has real uni-

37. The epistemological reading offered here is consistent with what Leibniz says in another text. See VI ii 489. It is also consistent with a long line of Platonists who want to distinguish between our experience of the world and its underlying reality; and it is similar to other seventeenth-century Platonists who discuss the relation between our experience of the world and God as its underlying cause. For example, see Plotinus, *Enneads* IV.3.15 and Conway, *Principles*, ch. V, sects. 4–7.

versal knowledge. What it is to have real knowledge, what is called in Latin *intelligere*, is to read the inner natures.³⁸

In this unusually direct passage, Leibniz puts his radical epistemological cards on the table. Before one can have any genuine knowledge, it is necessary to have universal knowledge, that is, it is necessary to understand the inner nature of things; moreover, such knowledge entails seeking the Good. But what exactly is the relation between the knowledge of an individual thing and universal knowledge? Against the background of Leibniz's Metaphysics of Divinity set out in chapter 6, the underlying point is clear: since each creature is an instantiation of the (selected) divine essence, it follows that to understand that nature is to grasp the essence of God. In this case, the nature of things and the objects of knowledge are the same: they are the Ideas or the attributes of God. To put it another way, because the Supreme Being is immanent in all of its products in such a way that they ultimately contain the same thing, to know one thing just is to know everything. Thus, when the appearances lead us to knowledge of the inner natures, they lead us to the essence of God in creatures and hence to God.

A brief review will help to highlight the importance of Leibniz's position. In the sixth note from the *Elements of natural law*, he wonders about the epistemological relation between the perceptions that are prior in time and the natures or essences that are prior in nature. Somehow the former are caused by the latter and can lead to knowledge of them. But how? According to Leibniz, each nature *is* the Supreme Being insofar as the latter is immanent in the world. To know a nature is to know God. But this account of the nature of things makes the answer to our questions about the epistemological role of perceptions even more unfathomable. Once we know what the inner nature is, it is all the more difficult to understand how our perceptions are supposed to be related to it.

We will have to turn to another text for a complete answer to the epistemological questions, but before doing so, let's consider a related remark that Leibniz makes in his sixth note and that offers some clues. He writes:

Harmony is diversity compensated by identity. That is, the Harmonic is uniformly deformed. [Seu Harmonicum est uniformiter difforme.] Variety delights but when it is reduced to unity, elegance, conciliation. Conformity delights, but [it must be] new, wondrous, unexpected; . . . it is most appreciated in things . . . where no one would suspect a connection.³⁹

In the philosophical context set by Emanative Harmony, the following interpretation of this passage suggests itself. When a mind perceives, what it perceives is harmony. For each mind, its perceptions constitute the variety

38. VI i 484. The Latin here is: *Bonum est quicquid appetitur à pernoscente. . . . Pernoscere est nosse quid res agere aut pati possit. . . . [N]eminem posse unius rei esse pernoscentem, nisi idem sit sapientissimus, seu pernoscens universalis. Quod pernoscere, id latinius dicitur intelligere id est intima legere.*

39. VI i 484–85.

in the world. The epistemological value of the perceptions consists in the fact that through the proper contemplation of its perceptions, a mind can be led to the unity and elegance of things. Leibniz concludes the note with a passage that we have seen: when we compare “the confusion of six thousand years . . . to eternity,” we recognize that it is like “one dissonant beat” that when counterbalanced “by other dissonances,” can lead to “the admiration” of God. In other words, our unanalyzed perceptions, which are prior in time, are merely various. They become “delightful” and offer an epistemological payoff only once we glimpse the unity and elegance within them. Once we delight in the “conformity” and recognize the “wondrous” interconnections among things, we can be led to “the ruler who embraces the infinite.”⁴⁰

For Leibniz, in the *Elements of natural law*, it is a good thing that the world first appears to a mind in such a confused way. In the second use of the image of the mind as mirror, part of which I quoted in section 1, chapter 6, Leibniz writes:

Thus, if there are many mirrors, that is, many minds recognizing our goods, there will be a greater light, the mirrors blending the light not only in the [individual] eye but also among each other. The gathered splendor produces glory. This is part of the reason for the deformity in mind: otherwise there would be nothing in the shadow to be magnified through the reflection of the mirrors.⁴¹

The claim here is remarkable. According to Leibniz, the goodness of the world is increased because minds can be “in the shadow.” The argument seems to go as follows: there would be no reason either for Reflective Harmony or for the mirroring of minds if there were no deformed minds to be enlightened; both Reflective Harmony and the good that comes from it are good things; therefore, the deformity of mind contributes to the goodness of the world. For our purposes here, the point to emphasize is that deformed minds are those that are not yet enlightened and so presumably attend only to the variety of things.⁴² Following the distinction between what is prior in time and prior in nature, the point seems to be that we will approach the nature of things only once we abandon the sensory phenomena and apply our understanding to harmony. In the sixth note from the *Elements of natural law*, Leibniz seems to assume that the perceptions of each mind, which are prior in time, can lead it to knowledge of what is prior in nature because they contain the harmony of the world within them. The suggestion is that the perceptions can offer knowledge of what is prior in nature but only once we abstract from the senses and approach them through the intellect.

I said above that in 1671 Leibniz had to offer an account of the sensory phenomena that was consistent with Emanative Harmony. By the time he

40. VI i 485. Also see VI i 466, 479.

41. VI i 464: L 137. Unfortunately, the date of this text is not clear; it was written sometime in 1670–71.

42. Also see VI i 437, 444, 485.

composed the sixth note from the *Elements of natural law* in the summer or fall of the year, he had done this. The note implies that what a mind perceives when it perceives the world is always harmony, understood to be diversity compensated by unity. The mind can think its perceptions in one of two ways. If it is “deformed,” it will see them as mere variety and “dissonance,” where the underlying unity of things is hidden. In this case, the mind sees the world as a world of becoming. However, for a mind that has become (somewhat) enlightened through the help of other reflecting minds, it can recognize the unity within the diversity, and gradually understand the inner nature of things. One of the remarkable things about Leibniz’s proposals in the sixth note is that everything seems to be internal to the perceiving mind: each contains the world, the means to the truth that underlies that world, all the objects of knowledge, and hence the Supreme Being insofar as that being is immanent in the world.

On perceiving and thinking

In section 2 of the Introduction, I maintained that one of the terrifying things about working on Leibniz is that no single work can be trusted as hard evidence for an interpretative point. Before we make any grand claims either about Leibniz’s epistemology or about his metaphysics in 1671, we surely need to consider other texts. For confirmation of the interpretative claims just made, let’s turn to a note entitled *On endeavor and motion, perceiving and thinking*.⁴³ Although it is unclear precisely when in 1671 Leibniz wrote this essay, given both its content and the unusually large number of additions and deletions he made to the text, I submit that it was written after the composition of the sixth note of the *Elements in natural law*, and that it constitutes his first attempt to articulate both Complete-*Ratio* Phenomenalism and the Complete-*Ratio* Theory of Substance. In this obscure text, Leibniz makes several assertions that are particularly relevant here. According to *On endeavor and motion, perceiving and thinking*, the world is constituted of finite created minds, their actions and thoughts. The sensory world exists as a representation in such minds, where each representation is different from the others. To exist is to be a (clear and distinct) perception: a body exists as a perception of mind, while a mind exists as a perception of itself.

43. Although the title was given to the text by the Academy editors, it was the content of the piece that encouraged them to do so. The Latin title is *De conatu et motu, sensu et cogitatione*. Both in this essay and in related texts, I translate the Latin verb ‘sentire’ and noun ‘sensus’ with the English, ‘to perceive’ and ‘perception.’ Although it is a bit awkward not to use the English terms ‘to sense’ and ‘sensation,’ the latter are in fact more problematic than the former because they connote a closer connection to the senses than Leibniz intends in the relevant essays. For example, in the text under discussion, Leibniz emphasizes the fact that the mind “is able to perceive [sentire] itself thinking.” In a related text, he writes “every perception [sensus] of our thinking [cogitationis] is true” (VI ii 307). Moreover, Leibniz uses the Latin verb ‘percipere’ to describe this activity of mind in some related notes. See, e.g., VI ii 287, 306.

One of the underlying assumptions in this essay is that since to exist is to be perceived, all minds – even momentary ones – must be capable of perceiving themselves. It follows that all minds – whether momentary or not – think. The last of these claims should not come as a surprise. In the discussion of *On the incarnation of God* in chapter 4, we noted Leibniz’s claim that all minds think constantly. Indeed, according to the (1670) Substantial Form Assumption, all minds act constantly and their acting is a form of thinking that produces thoughts. What is striking about the view presented in *On endeavor and motion, perceiving and thinking* is that Leibniz is prepared to claim that the created world is constituted entirely of minds and their thoughts, where the former are the cause and explanation of the latter. This is important. If the world is so constituted, then, for any mind-like substance S, there is no state of S that is not a thought; and if every state of S is a thought, then the Complete-*Ratio* Theory of Substance will apply to S just in case the thoughts of S are caused by S itself.

Let’s consider these claims as they appear in *On endeavor and motion, perceiving and thinking*. About existence, Leibniz first wrote: “Everything that exists is perceived [sentiri]. To be perceived is to be according to the principle of harmony.” He was finally satisfied with the claim: “Whatever exists is perceived.” He clarifies his position: “Whatever is perceived exists. . . . Whatever exists is perceived clearly and distinctly.”⁴⁴ For Leibniz here, to exist is to be perceived clearly and distinctly. He goes on to explain that we are able to be certain that we exist as thinking things because we perceive ourselves thinking. A body on the other hand “is perceived, but does not perceive.” The implication is that minds exist insofar as each perceives itself, whereas bodies exist insofar as they are perceived by minds. In a fascinating discussion about the proper way to express these matters in language, Leibniz makes clear his intention to reduce the entirety of the corporeal world to the perceptions of minds. He poses a question about how to express grammatically the relation between “*that which is [id quod est]*” and the “*I [ego]*” where the former is the object perceived and the latter is the subject perceiving. He finds the use of the Latin accusative case unsatisfactory; that is, he does not want “the proposition *the body is perceived [corpus sentitur]*” to be substituted by “*the Body is what I perceive [Corpus est id quod ego sentio]*.” He prefers instead to interpret the “I” as “*I perceive, I am [a thing] perceiving [sentio, sum sentiens]*,” and to place the object in the genitive case. Let’s be clear about the radical nature of Leibniz’s proposal. As an answer to the question about the proper grammatical expression of the relation between the subject and object of perception, Leibniz opts for the use of the Latin genitive case. For Leibniz, the correct rendition of the relation is: “The Body is something of which I am the thing perceiving [*Corpus est aliquid cuius ego sum sentiens*]” where the point (which is not as perspicuous in English as in Latin) is that the body is something that belongs to me as a thing that perceives. Leibniz is perfectly clear about his de-

44. VI ii 282. He makes the same point in a text that I discuss in the next chapter: VI ii 487.

sire to capture in language the fact that the relation between the perceived object and the perceiving subject is “a conjunction between the attribute and the subject.” That is, for Leibniz in *On endeavor and motion, perceiving and thinking*, bodies are attributes of minds. To make the point another way, bodies are intentional objects of perceiving minds.

That Leibniz is a phenomenalist is clear. But we need to know how the mind as subject of thinking comes to have the objects it thinks. Let’s first consider exactly what the mind thinks. Leibniz is explicit in the essay about the fact that what the mind thinks is harmony and that thinking is roughly equivalent to perceiving. After writing “Thinking is nothing other than the perception [sensus] of harmony,” Leibniz changed his account to “Thinking is nothing other than the perception [sensus] of a relation or more briefly, the perception of many things at the same time or the one in the many.”⁴⁵ The proposal here is consistent with the account of Emanative Harmony and Reflective Harmony presented in section 1 of chapter 6. Concerning Emanative Harmony, the point is that insofar as God is immanent in the world, God is what we see. Since everything in the world just is an instantiation of the divine essence, when we perceive the world, what we see is the divine essence variously instantiated. Concerning Reflective Harmony, the point is that insofar as each conscious mind reflects all the others, it contains them. As explained in section 5 of chapter 5, a being can be said to contain another just in case it thinks or understands it. I will discuss this topic in greater detail in the next chapter.

In *On endeavor and motion, perceiving and thinking*, Leibniz tells us more about the harmony that minds think.

It is necessary that, in thinkable things themselves, there is a *ratio* why they should be perceived, that is, why they should exist. The *ratio* is not in the thinking of singular things, and therefore will be in [the thinking of] many things. Therefore in all things. Therefore in Mind, that is, in the one in the many. Therefore, in Harmony, that is, in the unity of many things, that is, in diversity compensated by identity. Moreover God is the one that is all things.⁴⁶

Let’s look closely at this passage. The argument of the first two sentences seems to run as follows. For some finite mind *F* and for some thinkable thing *T*, *F* may think *T*. For every case in which *F* thinks *T*, there will be a *ratio*. One way in which *F* may think *T* is to perceive *T* in which case *T* exists for *F*. For every case in which *F* perceives *T* (and therefore for every case in which *T* exists for *F*), there will be a *ratio*. The *ratio* for the thinking of *T* by *F* will not be found in any single case of thinking *T*. Rather, the *ratio* for the thinking of *T* by *F* will be found in an analysis of all the thinking that

45. VI ii 282.

46. VI ii 283. We saw a part of this passage in ch. 6, sect. 1. The Latin is: *Necesse est in cogitabilibus ipsis rationem esse cur sentiantur, id est cur existant, ea non est in singulorum cogitatione, erit ergo in pluribus. Ergo omnibus. Ergo in Mente, id est uno in multis. Ergo in Harmonia id est unitate plurimorum, seu diversitate identitate compensata. Deus autem est unus omnia.*

F does. That is, we will be able to grasp the *ratio* for the thinking of T by F only through an analysis of all the thinking that F does. It seems fairly obvious that, according to Leibniz here, the thinking of T by F is *not* caused by T's doing something to F (say, appearing in F's perceptual purview). Rather, the *ratio* for the thinking of T by F and for all the other thoughts had by F is to be found somehow in F. But how? In the second half of the passage, the suggestion is that an analysis of F's thinking will lead us to the divine mind, which Leibniz identifies here with each of the following: the one in the many, harmony, the unity of many things, and diversity compensated by identity.

But what exactly is the source of this harmony? As we have noted, Leibniz in the second half of 1672 both equates harmony with God and maintains that what a mind perceives is harmony.⁴⁷ Before we can justifiably attribute either Complete-*Ratio* Phenomenalism or the Complete-*Ratio* Theory of Substance to Leibniz, we need to be perfectly clear that when he claims that the mind perceives harmony, the immediate source of the perceived harmony is the mind itself. The question is: when an individual mind F perceives harmony, does the perception come directly from God (in which case the source of the perception lies outside the mind) or does the perception of harmony come directly from F (in which case the source of perception lies inside the mind)? Since Leibniz equates God with harmony and insists that minds perceive harmony, it would seem to follow that the Supreme Being is itself the source of the perception. In fact, in *On endeavor and motion, perceiving and thinking*, we can discern Leibniz's original attempt to place the immediate cause of the thoughts of a mind squarely in the thinking mind itself. He writes: "To *think* is to be the *ratio* of change, or [seu] to change oneself" and moreover "To think *something* is to think a thought."⁴⁸ These comments suggest that when a mind thinks, there are at least three things involved: there is a thinking mind, a *ratio* of change that somehow exists in the mind, and a change that occurs in the mind and that is presumably a (new) thought. It would seem to follow, therefore, that the mind contains a *ratio* by means of which it produces its series of thoughts, the totality of which constitute a representation of the world for the mind perceiving them. In other words, the mind as the subject of thinking comes to have the objects it thinks because it produces them.

But how exactly is this supposed to work and how are these thoughts equivalent to the harmony of things? The Substantial Form Assumption offers help with this two-part question. The relevant part of the assumption claims that, for every mind-like substantial form F, F acts constantly by a set of instructions given it by God and moreover F acts through emanation. Following the Theory of Emanative Causation, if F acts through emanation, then F emanates its attributes to its products continually and yet is not

47. Besides the textual evidence displayed in the previous subsection, see, e.g., II i 174, VI ii 283.

48. VI ii 283.

depleted in any way, and the products of F have those attributes in a manner inferior to the way they exist in F. When we apply these assumptions to the account of thinking in *On endeavor and motion, perceiving and thinking*, we obtain something like the following. F acts constantly without depleting itself according to a set of instructions given it by God, and in doing so produces its thoughts. In this case, F is the unchanging emanative source of its changing thoughts and its thoughts are the inferior instantiations of what F contains in its nature. Following the Emanative Creation Story, F is itself an instantiation of the (selected) divine essence, which means that (as a product of God) it contains an inferior instantiation of the divine attributes. But it also follows from the Theory of Emanative Causation that the products that F produces through emanation are themselves (even more) inferior instantiations of those attributes. The answer to our two-part question is that each mind F contains the *ratio* for its thoughts which are themselves equivalent to harmony in that the sequence of discrete thoughts is an inferior instantiation of the (selected) divine essence.

This analysis of the role that the mind plays in perceiving the world offers some important clues about the epistemological journey from the sensory phenomena to the underlying truth. What Leibniz implies in *On endeavor and motion, perceiving and thinking* is that the epistemological value of our perceptions depends entirely on what they reveal about the divine mind that ultimately caused them. The suggestion is that, from the perspective of conscious minds, the world exists as a harmoniously constructed appearance whose proper contemplation is able to lead us to its transcendent source. Although the source of the appearance is the perceiving mind itself, the appearance nonetheless contains the world. In order to acquire knowledge of the underlying reality, we must abstract from the petty singularity of things, contemplate the unity within the variety, and thereby be led to “the one that is all things.”

The implications of *On endeavor and motion, perceiving and thinking* are important. The centrality of mind and its activities is clear. There are two points to emphasize. The first concerns the precise relation between an individual created mind and its perceptions or thoughts. Concerning the discrete thoughts of a mind F, Leibniz is clear about the fact that God constitutes the *ratio* for the thinking of a thing T by a mind F where the point is that God has given each mind the means to produce each of its thoughts. Concerning the totality of thoughts of a mind F, what F perceives is harmony which is F’s own representation of the world, in which the divinity can be observed. Although the ultimate source of harmony is God, when F perceives harmony, the immediate source of the harmony that F perceives is F itself. The underlying assumption is that the mind offers itself each of its thoughts, the totality of which is a version of the world given it by God. On the basis of the textual evidence presented here, it seems reasonable to attribute Complete-*Ratio* Phenomenalism to Leibniz. Moreover, given that in *On endeavor and motion, perceiving and thinking* the created world is constituted of minds and their thoughts, there is also good reason to attribute

the Complete-*Ratio* Theory of Substance to him. If the only states had by a mind-like substance S are thoughts and if the complete *ratio* for all the thoughts of S is contained in the nature of S, then the Complete-*Ratio* Theory of Substance is true of created mind-like substances.

In a related text, written sometime between early 1671 and the autumn of that year, Leibniz is explicit about the fact that the source of the thinking that a mind does is the mind itself. As he explains in *Trinity, mind*: “Just as God thinks things . . . because they follow from his nature, so does Mind. . . . Mind and God do not differ except that one is finite and the other infinite.” In the remainder of this brief note, Leibniz explains that infinite and finite minds are similar in that each thinks itself “in act.” The difference lies in the fact that God thinks creatures while created minds think existing things.⁴⁹

The second point to emphasize about the implications of *On endeavor and motion, perceiving and thinking* is closely related to the first. In this essay, Leibniz significantly re-describes the role assigned to the mind as the active principle in nature. Prior to the second half of 1671, when Leibniz talked about the active principle or substantial form F in a substance, the emphasis was on the fact that it acted through its passive principle P and thereby produced with P a substantial feature. All of the assumptions that we discovered in *On the incarnation of God* and the related writings of the period 1670–early 1671, namely, the Second Theory of Corporeal Substance, the (1670) Passive Principle Assumption, and the (early 1671) Substantial Form Assumption, focus on the active principle insofar as it acts on the passive principle. For the first time, in *On endeavor and motion, perceiving and thinking*, Leibniz focuses on the active principle insofar as it produces its own features or states. In order to grasp how significant this development is, let’s note precisely the changes in the role assigned the active principle in the second half of 1671. As argued in chapter 6, in the period 1668–early 1671, Leibniz accepted the Emanative Creation Story according to which created substances interact with one another so that the active principle F in a substance S contains the necessary though not the sufficient conditions for the features of S. Following that account, there is a complete *ratio* for each feature of S, but the *ratio* need not be contained in the nature of the active principle or substantial form, F. The instructions in F tell F how to act through its passive principle so that, because all the instructions in all the active principles correspond to one another perfectly (that is, because of (Weak) Parallelism), the relevant feature of S results. For example, the complete *ratio* for the stain on Wanda’s hand consists in the perfect coordination between the activity of the coffee and that of Wanda: the coffee must spill and Wanda’s hand must move in just the right way at just the right time. Thus, for Leibniz in the period 1670–early 1671, a substantial feature of a substance S arises in the following way: the F in S acts through the P in S according to F’s instructions and thereby creates with P the nature of S; as an active cor-

49. VI ii 287–88.

poreal thing, S interacts with other corporeal substances whose activities have been similarly prearranged by their active principles with the result that S acquires the relevant (non-essential) feature. For our purposes here, it is especially important that F acts as the necessary but not sufficient condition for the feature.

The work assigned the active principle in *On endeavor and motion, perceiving and thinking* is different. Unlike the writings of 1670–early 1671, Leibniz is here concerned to explain the features and states of F and exactly how F produces its own thoughts. More specifically, for the first time Leibniz attributes to F what I will call a *Production Rule*. In the earlier account, the primary role of the set of instructions was to tell F how to act on P. As Leibniz makes the point in *On the incarnation of God*, mind “acts constantly by a special *ratio*” on body.⁵⁰ The primary job of the Production Rule, however, is to tell F how to produce its own states. In fact, the Production Rule has much in common with the “architectural and harmonious principle” that we discovered in *On the power of persuasion, on dreaming and wakefulness* in that it offers objects to itself. In *On endeavor and motion, perceiving and thinking*, Leibniz suggests that there is a Production Rule in each mind F that constitutes the source for every state of F. I postulate that by the autumn of 1671, Leibniz had changed his account of the active principle in corporeal substances because he had decided to explain both the activities of substances and their interrelations wholly in terms of the perceptions of minds. We will have to wait until the next chapter for a complete account of Leibniz’s original proposals, but it is important to recognize exactly why the perceptions of minds are so important to Leibniz in the second half of 1671.

When the active principle in a corporeal substance S offers thoughts to itself, following the (early 1671) Substantial Form Assumption, those thoughts are produced by emanation. In this case, God emanates the divine attributes to each mind, which then emanates its thoughts. Such an account goes beyond Leibniz’s Emanative Creation Story in explaining the relation between God and the thoughts or perceptions of the minds in nature. According to the creation story told in section 3, chapter 6, the Supreme Being emanates its (selected) divine essence to every substance, which is thereby an instantiation of the essence, and moreover the complete concept of every substance has an ontological correlate in the substance. Each substance contains the divine essence but in a different way from every other. Once we attribute a Production Rule to every active principle F, we can better understand the relation between the divine essence and the activities of F. The nature of F is such that it contains the (selected) divine essence, which God emanates to it, and moreover F contains a Production Rule for exactly how it will emanate that essence. What Leibniz implies in *On endeavor and motion, perceiving and thinking* is that each of the thoughts of a perceiving mind F is the result of F’s emanating its divine essence in a man-

50. VI i 533–34. For the discussion of this point, see ch. 4, sect. 3.

ner consistent with its Production Rule. In this case, the Supreme Being emanates its essence to F, which then emanates that essence to its products, which are its thoughts.

For help with this account of thinking, let's return to our analogy of narrative options. In section 3, chapter 6, I compared the divine essence to a set of well-defined characters that could be used in various narrative options and the (selected) divine essence to a selected narrative within which the characters act out their natures in a particular manner. Further, I compared each individual substance to a translation of the selected story, where the idea was that each translation was a version of the complete story, though a version different from all the others. Analogously, each individual substance is an instantiation of the (selected) divine essence, though a slightly different version from all the others. For our purposes here, think of F as a mind that first grasps the story and think of the Production Rule in F as the rules of the language in which the story will be translated. In this case, F has the story and the means to translate it into the relevant language. Therefore, F is exactly like every other active principle (in that it contains the (selected) divine essence) and yet is different from all the others (in that it expresses the essence in a different way from all the others). The nature of F is like the (selected) story, its Production Rule is like the rules of the language, and its thoughts are like the sequence of translated sentences that result from applying the rules of the language to the story. We arrive at a subtle revision of Emanative Harmony. Following the analogy, the Supreme Being gives every active principle the same (selected) divine essence, but it gives each a different Production Rule for how to express or translate that essence. The result of F applying its Production Rule to the (selected) divine essence are the thoughts of F, the totality of which constitute F's version of the world. It is important that the thoughts of F change, although F remains the unchanging emanative source of them. It is also important that the thoughts are the emanative products of the nature of F and hence an inferior expression of that nature.⁵¹

With this said, we are now prepared to understand the comments in *On endeavor and motion, perceiving and thinking* which are among the most explicit about Complete-*Ratio* Phenomenalism and the Complete-*Ratio* Theory of Substance. Leibniz writes: "*To be* is for all the requisites to be perceived. A *requisite* is what, when it is not thought, another thing cannot be thought."⁵² Since, according to Leibniz, to be is to be perceived, the point seems clear: F perceives a thing R and hence R exists for F because F has

51. In an earlier note in the *Elements of natural law*, Leibniz struggles with how to describe the changing states of minds, where the question is how something that is fundamentally unchanging can have changing states. He writes: "There is even change in GOD, because there is Action" (VI i 483). As some of the (deleted) text suggests, he wants to model created minds on God in that he intends for minds to remain the same and yet have changing states. For the additions and deletions to the text, see VI ii 568.

52. VI ii 283.

perceived all the requisites of R. With the notion of a Production Rule in hand, we can see how this might work. The Production Rule of F is a rule for the continuous production of the discrete states of F so that it instructs F about exactly what to think at every moment of F's existence. Following Leibniz's suggestion, if F exists from t_1 to t_n and has a different thought at each moment of its existence, then at every moment, there will be an instruction about what to think next. The present thought occurring at t_1 , together with the Production Rule, will determine what F will think at t_2 . In this case, the complete *ratio* for each thought of F will be contained in the nature of F. To put it another way, the necessary and sufficient conditions for each thought of F will be constituted of the conjunction of the principle of activity in F, its Production Rule, and the previous thought. By such means, the Production Rule helps to produce the set of instructions which is the ontological correlate of the complete concept in F. As it turns out, however, the states of F will themselves act as instructions for P. We will return to this point in the next section.

I said above that in the spring of 1671 Leibniz had his work cut out for him. He had to explain how a perceiving mind could be the cause of its own perceptions and how the phenomena could contain God and include (at least) the morally relevant states of other human minds. The achievement of *On endeavor and motion, perceiving and thinking* is that it offers just such an explanation. The general story is that the thoughts of a mind F follow from its nature, which itself follows from God, and moreover, because the ultimate cause of the thoughts is God, as the emanative source of everything, the thoughts contain their divine source. Leibniz has constructed Complete-*Ratio* Phenomenalism so that the phenomena contain God in that they are caused by the perceiving mind, which is itself caused by God. There is a neat hierarchy of emanation and explanation: the Supreme Being emanates the (selected) divine essence to every mind, which then emanates its thoughts. Given the nature of emanative causation, the thoughts contain God because ultimately the Supreme Being is their source.

Leibniz concludes his discussion of thinking in *On endeavor and motion, perceiving and thinking* with an obscure comment that suggests such a hierarchy of emanative causation and explanation. He writes: "There is a *ratio* why something is, [namely,] because it already is; or because there is a principle of harmony. From the first [follow] the actions of bodies; from the latter [the actions] of minds."⁵³ When we place this comment in the context of Emanative Harmony and the account of thinking offered earlier, the following interpretation suggests itself: for any particular body that a mind perceives, there is a complete *ratio* for why the mind perceives the body now. This complete *ratio* is in the nature of the mind that has the perception. More specifically, according to the interpretation offered here, the *ratio* is the conjunction of the activity of the mind, its Production Rule, and its previous thought. Leibniz's comment also suggests that this *ratio* itself has a

53. VI ii 284.

ratio, which is harmony. That is, God constructs the world so that each mind has a sufficient reason to perceive what it perceives. Although minds are causally responsible for what they perceive, the minds themselves follow from God who is the principle of harmony.

By such means, we finally obtain answers to the two epistemological questions posed at the outset of section 1: what epistemological value do the appearances have and what is the causal relation between the appearances and the underlying realities? The answer to our questions is that each mind is both the source of its own appearances and the means to escape from them. As the clock arguments discussed in section 1 clearly show, no single appearance or group of appearances can by itself lead us to the truth.⁵⁴ The sixth note from the *Elements of natural law* displays why this is the case. The epistemological journey from the appearances and the world of becoming will only begin when one has abstracted from the singularity of things so as to notice their vast interconnections. Then, we can apply our intellect to the unity within things and eventually grasp the inner nature and divinity of all things. In brief, the journey to the truth consists in learning how to reflect on oneself in the right way.

In the second half of 1671, as we have noted, Leibniz claims that minds act on themselves and that, in so doing, they perceive the world, which is equivalent to harmony. It is important that by the autumn of 1671, he also insists that to act is “to change by changing oneself” and claims that “the essence of Mind [consists] in action on itself.”⁵⁵ Concerning the mind as the subject of perceptions, he implies that the mind contains an internal “architectonic principle” that is its Production Rule and that causes it to perceive as it does. The objects of perception are both the variety in the world in that each perception contains all the variations of the essence of God, but they are also the unity in the world in that the rational mind can begin to glimpse the unity within the variety. From the glimpsing of unity, it is possible for the mind “to acquire real knowledge,” which is to understand or “read the inner natures.”⁵⁶ Consistent with the claims of section 4, chapter 6, the journey to truth is an internal one, where the mind turns itself upon itself in order to discover the Ideas within. It is significant that in the second half of 1671, the entire epistemological journey, from beginning to end, is internal in the sense that the rational mind is the cause of its perceptions. But, despite its internal nature, the journey of the individual mind is not isolated: God has arranged things so that all minds are in Reflective Harmony. To put it another way, since each mind is itself an instantiation of the divine essence and since what each mind perceives when it perceives harmony contains all the other instantiations of that essence, each mind perceives all the others and hence all the others play some part in its epistemological journey.

It is important to be perfectly clear about the radical implications of this

54. See n. 20. 55. VI i 475, 482.

56. See the *Elements of natural law*, VI i 485.

section. Let us summarize the claims that we have discovered in some of the essays of 1671 and revise some of our former assumptions accordingly.

- *Complete-Ratio Phenomenalism* claims that for every mind-like form F, there is a complete *ratio* in F for all its thoughts (i.e., its states), where the complete *ratio* is best understood in terms of a *Production Rule*.
- The *Production Rule* of a mind-like form F contains instructions for the production of the states of F in the sense that the necessary and sufficient conditions for each state of the substantial form F consists in the conjunction of the principle of activity in F, its Production Rule, and its previous state.
- (mid-1671) *Emanative Harmony* claims (1) that God is the variety in the world in that every substance, although it contains the same (selected) divine essence as every other substance, also contains a Production Rule according to which it instantiates that essence in a way different from every other substance, and (2) that God is the unity in the world in the two-fold sense that each individual creature and the totality of creatures instantiate the divine unity so that each individual is a unity and the totality is an interrelated whole.
- (mid-1671) *Reflective Harmony* extends the relation of Reflective Harmony to all thinking creatures, that is, it claims that every thinking substance thinks or reflects the entire world. It follows that every thinking substance thinks all other substances, and therefore contains them.

3. Metaphysical cohesion and Preestablished Harmony

I now turn to some of the theological motivations behind the development of Preestablished Harmony. According to Leibniz's Second Theory of Corporeal Substance, the substantial nature is constituted of an active and passive principle; according to the Principle of Substantial Self-Sufficiency and the Principle of Causal Self-Sufficiency, a substantial state will not strictly belong to the substance unless the state results from a genuine union created by the two principles. With the development of Leibniz's panorganism and his theory of mind-like substance, some difficult questions arise concerning the Metaphysical Problem of Cohesion as suggested in section 1, chapter 7. The basic question here is: how do the active and passive principles in a corporeal substance relate so as to form a union? Once Leibniz decided to construct passivity out of mind-like entities, two new questions arise: how do the mind-like substances that constitute the passive principle in corporeal nature contribute to the unity within that collection and how does the state of a substance result from a collection of mind-like substances? In this section, I offer answers to these questions. During the second half of 1671, Leibniz made significant headway in constructing an account of Metaphysical Cohesion consistent with his new theory of the passive principle in corporeal substances. It seems likely that key features of his account evolved so as to solve more thoroughly the theological prob-

lems of the Eucharist and of resurrection. The result is Preestablished Harmony.

Before analyzing Leibniz's new theory of Metaphysical Cohesion, let's review his former accounts. For Leibniz, the most fundamental feature of mind is that it acts constantly. Prior to 1670, Leibniz says very little about the activity of created minds either on themselves or on bodies. In one of the few pre-1670 texts in which he discusses the activity of mind, he acknowledges that "we cannot explain . . . what it is to think;" nor are we able "to explain the mode [modum] of causing . . . which concerns the actions of incorporeal Beings on external things."⁵⁷ Despite Leibniz's silence about the details of the actions of minds, we can piece together the general features of a theory about Metaphysical Cohesion. I argued in chapter 6 that Leibniz's original conception of the principle of activity was conceived along Platonist lines. As the (early 1671) Substantial Form Assumption suggests, the causal model is one of emanative causation where the states flow from the mind without the mind changing in any way. According to Leibniz during the mid-1660s, one of the results of this activity is that a mind is a vital unity that is naturally indestructible. It follows from this account of mental activity that the mind organizes the parts of its body and thereby produces a single, unified corporeal substance because its power emanates to all the parts of the matter. For example, according to Leibniz in the April 1669 letter to Thomasius, extended matter and primary mind combine to constitute the corporeal nature, which is the complete *ratio* of the primary features of the body; these primary features (magnitude, figure, and motion) interact with the perceiving subject and thereby cause the appearances. Wanda's organized matter interacts with the organized matter of the kitchen table so that she feels the coolness of the formica. According to this picture (which is implicit in the first use of the image of the town quoted in section 1), there is in theory a precise causal story to tell about how the appearances are caused by the nature of the substance that is itself a single unified thing. This causal story assumes that each of the objects which interact with one another is a single thing constituted by a mind organizing a specific chunk of matter. Although there is a divine mind for non-human substances and human minds for human substances, the Metaphysics of Cohesion is the same.

In chapter 4, I showed that Leibniz's edition of Nizolio's text, which was published in early 1670, contains the first signs of the radical transformation in his theory of substance. I argued there that Leibniz developed a conception of non-human mind that could accommodate his metaphysical and physical requirements. As I suggested in chapter 4, the model for the account of Metaphysical Cohesion was the hypostatic union of the incarnation of God. According to the (1670) Substantial Form Assumption, there will be a proper substantial union if and only if the active principle in a corporeal substance acts on its passive principle and the latter is the "instrument

57. VI i 286-87: L 89. This text dates from 1667.

of acting” of the former. The states of the corporeal nature of a substance S will strictly speaking belong to S only if the active and passive principles in S are unified in this way. Therefore, the account of Metaphysical Cohesion in *On the incarnation of God* depends on the constant activity of the active principle on its passive principle. In chapter 7, I argued that by the publication of his two-part work, the *Theory of Abstract Motion* and *New Physical Hypothesis*, Leibniz had accepted a conception of the passive principle of corporeal substance, according to which that principle was constituted entirely of mind-like substances. The Hobbesian notion of endeavor (*conatus*) gave Leibniz a way of conceiving the activity of mind that was strikingly like the activity of body. It follows that the substantial union somehow involves the activity of one mind (namely, the active principle) on an infinity of other mind-like substances (namely, the passive principle). Once Leibniz developed his Second Theory of Corporeal Substance and rejected the reality of passive extended matter, he had to reconsider the exact relation between the active and passive principles within such substances.

According to Leibniz in the *Theory of Abstract Motion*, the goal of his philosophy is to posit something sound about God, mind, perfection, and happiness.⁵⁸ After publishing his *Schediasma*, he applied himself more seriously to ethical topics in general and to the happiness of humans in particular. In his early notes for the *Elements of natural law*, he explores the details of his Platonist epistemology and ontology in an ethical context. In working through his ethical views, which entail that each conscious mind is like a mirror, he began to expand on his account of conscious mind as a harmony of endeavors. By the middle of 1671, the standard definition of the activity of conscious minds has become “action on itself.” What awoke Leibniz from his Hobbesian slumber and motivated him to reconsider his views about Metaphysical Cohesion in general and about conscious minds in particular was the development of his theory of Preestablished Harmony.⁵⁹ Let’s consider a letter of May 1671 that treats Leibniz’s new views about mind and the cohesion between the active and passive principles in nature.

Resurrection, core of substance, and Prearranged Diffusion

In an important letter to Johann Friedrich which we considered in chapter 7, section 4, and to which Leibniz attached the essay *On the resurrection of*

58. VI ii 302.

59. I do not mean to suggest that Leibniz stopped using the notion of endeavor. He most certainly did not. But I do mean to claim that starting in May 1671, he began to reconsider his views about thinking. Although in the important May 1671 letter to Johann Friedrich – which I have previously discussed and will return to below – he explores the foundations for a new account of thinking, he also presents his former one. He writes: “In the same way that the Actions of bodies consist [bestehen] in motion, so do the actions of mind consist in endeavor” (II i 108). For Leibniz’s new account of the activity of mind as “action on itself,” see VI ii 482, 484, 493.

the body, he offers his new account of Metaphysical Cohesion. As he writes in this letter of May 1671: “I am of the opinion that in a body, whether of a human being or animal, vegetable or mineral, there is a core [Kern] of its substance. . . . This core is so subtle that it remains also in the ashes of burned things and can, so to speak, draw itself into an invisible center.”⁶⁰ In the last chapter, I emphasized the fact that according to Leibniz, this “flower of substance” or “seminal center . . . remains unconquered by anything that happens.”⁶¹ According to my account, the core of a substance S consists in the dominant mind or substantial form F of S and the dominant minds in each of the substances which constitute the passive principle P of S. As long as the core retains F and the dominant minds in $p_1, p_2, \dots p_{n+1}$, then the core remains constant regardless of how much the passive principles in $p_1, p_2, \dots p_{n+1}$ may increase and decrease. In keeping with the panorganism articulated in the last chapter, each of the substances $p_1, p_2, \dots p_{n+1}$ will itself have a core, and so on *in infinitum*. For Leibniz in his letter to Johann Friedrich, whether it is the movement of an object, the generation of a plant, or the resurrection of the body, the same process occurs: there is a core of substance that diffuses the thing.⁶²

In chapter 7, I acknowledged that before we could understand the proper functioning of the core, we would have to explain exactly how F and P are related. As the letter to Johann Friedrich makes clear, F has causal power over a greater or lesser expanse of P; moreover, following the (early 1671) Passive Principle Assumption, F has that power (somehow) *through* the dominant minds in the substances $p_1, p_2, \dots p_{n+1}$ which constitute P. But how exactly does F act through those minds? The answer to this question brings us to the theory of Metaphysical Cohesion, which Leibniz constructs to conform to his theory of panorganism and which constitutes important evidence of Preestablished Harmony.

Following Leibniz’s use of the verb “to diffuse [diffundere],” let’s call the relation between the active and passive principles one of *diffusion*. From Leibniz’s comments, we can interpret the relation as follows. For a dominant mind F of a substance S, F diffuses its passive principle P just in case F has constant causal power over P. Since P is constituted of substances $p_1, p_2, \dots p_{n+1}$, and since the dominant minds in $p_1, p_2, \dots p_{n+1}$ determine the identity of P, F will diffuse P just in case it has constant power over the minds in $p_1, p_2, \dots p_{n+1}$. Moreover, F is able to diffuse P regardless of how much the passive principles in $p_1, p_2, \dots p_{n+1}$ may vary. For example, as baby Wanda grows to adulthood, the core of her substance remains unaffected in the sense that F and the dominant minds of $w_1, w_2, \dots w_{n+1}$ remain constant, but the passive principles in $w_1, w_2, \dots w_{n+1}$ expand. And as those passive principles expand, so does the expanse of the power of diffusion of the dominant minds, $w_1, w_2, \dots w_{n+1}$. But it is crucial to understand that while each dominant mind of each of these substances diffuses its passive principle, those minds are themselves diffused by their dominant

60. II i 108. 61. II i 116–117. 62. II i 116.

mind. To put it another way, there is a hierarchy of diffusion. The dominant mind in Wanda diffuses the minds in w_1, w_2, \dots, w_{n+1} , while each of those minds diffuses the dominant minds in its passive principle, and so on all the way down.

That the diffusion relation between F and P is one of causal power is clear. But we need to know more about exactly how it works. Although there is no explicit textual evidence in the letter to Johann Friedrich to support this claim, there are good reasons to believe that the relation is one of Preestablished Harmony. Before considering those reasons, let's take stock. At the beginning of this section, I said that Leibniz's theory of panorganism of early 1671 posed some difficult questions. The questions were: how do the active and passive principles in corporeal substance interact so as to form a union, how do the mind-like substances that constitute the passive principle in the substance contribute to the unity within that collection, and how does any state or feature of a substance result from the combination of minds? The letter to Johann Friedrich offers answers to these questions: the union formed between the active and passive principles in corporeal substance occurs when the former diffuses the latter; each of the mind-like substances in the passive principle contributes to the unity of the whole by being so diffused; and the state of a substance is the result of this diffusion and is itself a substantial state. But an even more fundamental question arises at this point: when the dominant mind or F in a substance S diffuses its passive principle P, what exactly does it do? Somehow, when F acts on P, it forms a unity with P and begins a cascade of diffusion where F diffuses the dominant minds in the substances of P, which themselves diffuse the dominant minds in their passive principles, and so on, *in infinitum*. But how?

For help with this question, let's turn to Leibniz's Aristotelian and Platonist assumptions. It follows from the Principle of Substantial Self-Sufficiency that each of the substances in P will be causally responsible for its own activities and states. That is, for each of the substances in P, only the nature of the substance can be causally responsible for its actions and states. It follows that the diffusion relation between F and the substances in P (namely, p_1, p_2, \dots, p_{n+1}) cannot be one in which F acts as an efficient cause of the actions of any of the substances p_1, p_2, \dots, p_{n+1} . In fact, the causal dominance that F has over p_1, p_2, \dots, p_{n+1} must be such that F in no direct way contributes to the actions of any of the substances: for each of these substances, the nature of the substance must constitute the source of its actions or the Principle of Causal Self-Sufficiency is violated. But then what sort of causation is it? How can F have causal power over P without contributing directly to the actions of the substances in P?

It would appear that the diffusion relation assumes Preestablished Harmony. In order to ensure the self-sufficiency of each of the subordinate substances, each must have a complete *ratio* for all its states. In order to ensure the proper correspondence between F and P, they must be perfectly parallel. That is, each substance contains the complete *ratio* for all its states and, moreover, the states of the substances correspond perfectly. In the next

chapter, we will consider a text that reveals a number of details about the nature of the diffusion relation and about exactly how the union between F and P is formed. For now, an analogy will help to explain some of the features of the relation between F and P. Think of each dominant mind in a substance as the conductor of an elaborate symphony orchestra. Although the conductor has a complex score that contains instructions for each musical state, each of the musicians in the orchestra has a score that specifies exactly what contribution she or he is supposed to make to that state. Although the conductor waves the baton appropriately and in that fashion instructs the musicians, each musician is nonetheless responsible for her or his individual contribution and the members of the orchestra as a whole are responsible for the production of the music. Further, let's assume that the musicians would cease to play were the conductor to stop conducting. In this case, the conductor is responsible for the persistence of the music although every single musical state is produced by the musicians; moreover, both the conductor and the musicians contribute to each musical state. The diffusion relation between F and P resembles the one described here between conductor and orchestral members, except that in the diffusion relation there is no genuine interaction. In the diffusion relation between F and P, as long as F acts and offers instructions to the subordinate substances in P, each of those substances will follow its own instructions. In this case, each state of S is the result of the activity of F and the activity of p_1, p_2, \dots, p_{n+1} . For the sake of convenience, let's offer a tentative summary of this relation:

- The (tentative) *Prearranged Diffusion Relation* between F and P in a substance S creates a *core of substance* which is constituted by F and the dominant minds in P and which can be more or less expansive. The *Diffusion Relation* is such that although each of the subordinate substances in P acts out of its own nature, F emanates instructions for the activity of each of those substances and, moreover, the activity of F and of the substances in P is each a necessary condition and all are sufficient for any substantial feature f of S.

An obvious question arises at this point: since there is no genuine causal interaction between substances in a world of Preestablished Harmony, it is not clear how F can act as a requisite for the activity of the substances in P. In fact, F cannot be such a necessary condition unless we assume (Strong) Parallelism. I will discuss the relation between F and P in much more detail in the next chapter. Suffice it to say here that the perceptions of the substances in P correspond perfectly with the instructions of F. Underlying Leibniz's new conception of Metaphysical Cohesion is the commitment to a world of Emanative and Reflective Harmony where the constituents of a substance S are in perfect correspondence. Once we assume (Strong) Parallelism between F and P and once we combine Complete-*Ratio* Phenomenalism, (mid-1671) Reflective Harmony, and the Production Rule, we can piece together an answer to our question. Given that F emanates its states and given that each mind-like substantial form in p_1, p_2, \dots, p_{n+1} is con-

structed so as to reflect and contain the states of F, the Production Rule explains in what sense F is a requisite for the activity of the substances in P. Because the proper functioning of the Production Rule of any form F depends on the preceding thought or state of that form, and because the Production Rule will cease to function if F does not have the relevant thought, it follows that each of the substantial forms in $p_1, p_2, \dots p_{n+1}$ will act in the prearranged fashion only if each perceives the relevant state of the dominant mind. In brief, F acts as a necessary condition for the activity of P because the subordinate substances in P will follow their Production Rule only if each perceives the states or instructions in F. Although there is no interaction between F and the subordinate substances in P and although the complete *ratio* for each substantial state lies in the substance, God has constructed the world so harmoniously that the states of F and the states of the subordinate substances in P correspond perfectly. Each constituent of S behaves as it does only because God has arranged things to parallel each other so thoroughly.

It is important to grasp the close similarity between the account of substance offered in the letter to Johann Friedrich and the Second Theory of Corporeal Substance, which we discovered in the texts of 1670–early 1671 and articulated in chapter 4. The theory claims that for each corporeal substance S, whether human or non-human, the nature of S is constituted of a passive principle P and a mind-like substantial form F, which in unconscious substances is a momentary mind. Moreover, consistent with the (1671) Substantial Form and the (early 1671) Passive Principle Assumptions, it asserts that F is permanently attached to some P so as to produce an organization with it. Leibniz’s proposals in the May 1671 letter are consistent with this account. According to both accounts, F is permanently rooted in a body on which it acts to produce an organization. By May 1671, the permanent connection between F and P has become the core of the substance, and, on my interpretation, the relation between F and P has become one of Prearranged Diffusion.

Eucharist, core of substance, and Prearranged Diffusion

The other text of the period that contains evidence of Preestablished Harmony is also a letter that discusses a theological topic. This time, the theological problem is that of the Eucharist and the letter is to Arnauld. There are two important points to make about the theological proposals in this text of November 1671. First, Leibniz explains to Arnauld that his work in physics led him “to the science of mind” and to the insight that the “true locus of our mind is a certain point or [seu] *center*.”⁶³ In the texts of the period, Leibniz emphasizes the importance of putting mind or substance in an unextended place. There are good reasons to believe that both in the letter to Arnauld and in the other texts in the period, when Leibniz refers to

63. II i 172: L 148; my emphasis.

“the locus of our mind” or “the center” of the substance, he has in mind the core of substance. Throughout the period, Leibniz makes grand claims about the great theological importance of his account of substance and mind, and he often asserts that the account allows him a neat explanation for immortality. As Arnauld and Leibniz’s other correspondents would have known, it was standard for philosophers in the seventeenth century to argue for the immortality of the soul based on its lack of extension.⁶⁴ It seems unlikely that Leibniz would have claimed innovation for such a well-used argument. Therefore, it is probable that the argument for immortality that he claimed to be innovative is not one based on the indestructibility of a non-extended mind, but rather on the indestructibility and subtlety of the core of substance. It is on the basis of such hypotheses, Leibniz says, that he plans to defend “the mysteries of Trinity, Incarnation, Predestination, and the Eucharist.”⁶⁵

The second point to emphasize about the theological proposals in Leibniz’s letter to Arnauld is the new sophistication of his account of the Eucharist. I now want to display the subtlety of Leibniz’s position and show that it assumes (Strong) Parallelism, Complete-*Ratio* Phenomenalism, and the Prearranged Diffusion Relation. Two questions were left unanswered in our discussion of the letter to Arnauld in section 4 of chapter 7: how exactly does the *body* of Christ become present in the bread, and how does Leibniz’s answer to that question entail transubstantiation? We are now prepared to give answers to these questions. Let’s reconsider a passage, part of which we saw in chapter 7:

For I will also show what no one has previously thought, [namely,] that in the ultimate analysis *Transubstantiation and real multipresence* do not differ; that a body is not able to be in many places except when its substance is understood under diverse appearances. For only substance is not subject to its extension and consequently (as it will be shown distinctly that where a thing is, is explained by the substance of the body) to the conditions of place. And consequently Transubstantiation, as most cautiously expressed in the phrase by the Council of Trent, and [which] has been illustrated by me based on D. Thomas, does not contradict the Augsburg Confession; indeed it follows from it.⁶⁶

In this difficult passage, Leibniz boasts that he will offer a never-before-seen explanation of how the same body can be in different places at the same time and that he will show how transubstantiation and real presence reduce

64. For example, Kenelm Digby had offered an extended version of such an argument in his *Two Treatises*. Although Leibniz thought well of Digby, he criticizes Digby’s proposals about mind. See II i 113.

65. II i 173: L 149.

66. II i 175. The Latin in the crucial part of the passage is: *Nam hoc quoque ostenditur . . . nec corpus aliter in multis locis dissitis esse posse, quam ut substantia sua sub diversis speciebus intelligatur. Sola enim substantia eius extensioni ac proinde (ut distincte ostenditur ubi quod hoc rei sit, substantia corporis, explicabitur) loci conditionibus subiecta non est. . . .*

to the same thing. Whereas the goal of Leibniz's essay, *On transubstantiation*, was to explain the multipresence of the same substance, the point in the letter to Arnauld is to offer an account of the multipresence of the same body. Leibniz's explanation of the multipresence of the body of Christ depends on a distinction between the apparent and real body and on the newly developed details in his account of substance. There are two main parts of his explanation. The first concerns the real change that underlies the Eucharistic transfer. Leibniz has constructed the core of substance and devised the Diffusion Relation so that the core of a substance S is present wherever the Diffusion Relation between the core of S and any collection of substances occurs. That is, following the Prearranged Diffusion Relation, S will be present in a collection of substances R just in case the core of S contains the instructions for the activity of the substances that constitute R. In other words, the core of S (which consists of the F of S and the dominant minds of the substances in P) will diffuse a collection of substances R (which then become the subordinate substances of P) just in case the activity of those (subordinate) substances depends in the relevant way on the instructions in the core of S. Since there is no genuine causal interaction between S and R and since the dependence of R on S reduces to (Strong) Parallelism, the core of Christ can diffuse a number of diverse collections of substances at the same time. As Leibniz suggests in the quoted passage, because neither the substance nor the body of Christ is subject "to the conditions of place" and because "where a thing is, will be explained by the substance of the body," the body of Christ (i.e., its core, which contains the dominant minds of its body) can be in many different places at the same time. Since the core of Christ will be present wherever there is a collection of substances which act according to the instructions in the core, the substance and body of Christ can be present simultaneously in Rome and in Augsburg.

But Leibniz's explanation of multipresence gives rise to a problem. Both the churchgoers in Augsburg and the participants of the Roman mass will want to know how this metaphysical hocus pocus has anything to do with the bread they taste and the wine they drink. Their eating and drinking will not have the proper religious significance unless there is a direct correspondence between the phenomenal experience and the underlying body and blood of Christ. Here the difficulty is to explain exactly how the core of the body of Christ relates to the apparent bread. This brings us to the second main part of Leibniz's new account of the Eucharist, which depends on Complete-*Ratio* Phenomenalism and (Strong) Parallelism. As suggested in the quoted passage, although the phenomenal body is subject to extension, the underlying reality is not. According to Leibniz, his explanation of "multipresence" depends on the fact that "the substance of a body" can be "under" diverse appearances. But how? Let's return to the passage from the letter to Arnauld that was quoted in section 1. According to Leibniz, "the substantial form differs from the qualities" of a substance like "the true nature [figura] of a city, when seen from a tower in its midst, [differs] from the infinite variations which appear" when the town "is seen" from "an area on

the outside” of the town.⁶⁷ In order to solve our problem, we need to explain exactly how the same body can be “under” infinitely diverse appearances and yet be related to them. In a passage quoted in section 4 of chapter 7 Leibniz offers some help. After explaining to Arnauld that the solution to the problem of the Eucharist depended on his realization that the nature of body just is its principle of motion or activity, Leibniz writes:

Not until then was it most clearly apparent how substance differed from appearances and in particular that there is a *ratio* in terms of which God is able to be understood clearly and distinctly to bring it about that the substance of the same body is in many different places or, what is the same thing, under many appearances [sub multis speciebus].⁶⁸

In the last section, we saw that according to Leibniz in *On endeavor and motion, perceiving and thinking*: “There is a *ratio* why something is, [namely,] because it already is; or because there is a principle of harmony.”⁶⁹ As I interpreted this claim, for each mind, there is a complete *ratio* for all its perceptions, and moreover, the *ratio* is in perfect coordination with every other in that it is consistent with Emanative Harmony. Within this context, the quoted passage can be interpreted as follows. God has constructed things so that the substance of Christ and the participants in the mass thoroughly correspond. The experience of each participant is in perfect harmony with the activities of the core of Christ.

In fact, (Strong) Parallelism, Complete-*Ratio* Phenomenalism, and the Prearranged Diffusion Relation seem perfectly constructed both to solve the metaphysical difficulties posed by the Eucharistic transfer and to capture its religious significance: the substance and body of Christ are present wherever his core is present; the core is present when it is in a Diffusion Relation with the relevant subordinate substances in the bread; and the experience of the faithful perfectly parallels the reality of the underlying changes. Although the underlying metaphysics is complicated, the genius of Leibniz’s solution is clear. The demands of transubstantiation and real presence are satisfied with equal ease: consistent with Lutheran and Catholic doctrine, the bread keeps its body or passive principle and all its appearances while being “joined” by the substance and the body of Christ. By such means, Leibniz hopes to bring Lutherans and Catholics more closely together.⁷⁰

In an essay written a few years later, Leibniz is explicit about the advantage that his account of the Eucharist has over that of other mechanical philosophers and about the crucial role that the active principle or substantial form plays in his account. In this important text, which is entitled *On the true method in philosophy and theology* and which I discussed briefly in section 2 of chapter 2, Leibniz criticizes the ineptness of the mechanists in treating such theological difficulties, and then reveals the exact source of

67. II i 170. 68. II i 175. 69. VI ii 284.

70. I do not mean to suggest that Leibniz’s solution would have convinced members of either faith. His solution apparently did not convince Arnauld, who was not even impressed enough to respond.

his own success: because he has grasped the proper role of “what the scholastics called . . . substantial form,” he has been able to “illuminate Natural Theology and the mysteries of faith.” He writes in this essay of 1673–75:

The result [of his analysis] is that . . . neither the same body in several places nor . . . several bodies in the same place contains anything contradictory . . . ; all [theological] fallacies can be avoided once the true and inevitable concept of substance is understood. Of what great significance these theorems are for the firm foundations of religious faith and for peace among the churches, those who have understood will appreciate.⁷¹

For the sake of clarity, let’s summarize some of the most important conclusions of this section, all of which concern “the true and inevitable concept of substance.” In chapters 4, 6, and 7, I presented (and sometimes revised) the metaphysical tenets discovered in the texts of 1669–71. It is noteworthy that each of the new ideas that we have discovered in the works of May – November 1671 is merely a revised version of one of those original metaphysical tenets.⁷² What is new in the second half of 1671 is the Prearranged Diffusion Relation and the clarity of the relation between the active and passive principles in a corporeal substance. That the relation stands at the center of Leibniz’s revised account of substance is clear. It is important to understand that this account is both similar to the Second Theory of Corporeal Substance (articulated in chapter 4) and a significant break with it. While the mid-1671 version has exactly the same structure as the earlier one, it denies intrasubstantial causation and assumes that the infinite panorganic constituents which it contains are related by Preestablished Harmony. In other words, the mid-1671 account of substance is both a revised version of the earlier conception and the original articulation of Leibniz’s mature notion of corporeal substance. While acknowledging its roots in the past, let’s call the revised version the *Theory of Corporeal Substance*.

- The (mid-1671) *Theory of Corporeal Substance* maintains that for each corporeal substance S, whether human or non-human, the nature of S is constituted of a mind-like substantial form F and a passive principle P, where F and P have a Prearranged Diffusion Relation with one another. For the nature of P, see the (early-1671) Passive Principle Assumption in chapter 7.
- The (mid-1671) *Substantial Form Assumption* claims that, for every mind-like substantial form F in a corporeal substance S, F acts constantly through emanation and therefore can neither be created nor destroyed by anything other than God; F contains the (selected) divine essence and a Production Rule where the latter specifies how F will emanate the former; F emanates its states which are its thoughts and which are the ontological correlates of the predicates in the complete concept of S; F is permanently rooted in its passive principle P with which it forms a *core of substance*,

71. VI iii 158–159; W 64–65.

72. For the earlier versions, see the Appendix, Part II, chs. 4, 6, and 7.

where the relation between F and P is one of Prearranged Diffusion and where the unity is indissoluble.

- The (1671) *Prearranged Diffusion Relation* between F and P in a substance S creates a *core of substance* which is constituted by F and the dominant minds in P and which can be more or less expansive. The Diffusion Relation is such that, although each of the subordinate substances in P acts out of its own nature, F emanates instructions for the activity of each of those substances and each perceives its instructions; moreover, the activity of F and of the substances in P is each a necessary condition and all are sufficient for any substantial feature f of S. The Diffusion Relation assumes Complete-*Ratio* Phenomenalism, the Complete *Ratio* Theory of Substance, and (Strong) Parallelism.
- (Mid-1671) (*Strong*) *Parallelism* is the view that the constituents of a substance S are in perfect correspondence with one another.

4. Preestablished Harmony and the Principle of Sufficient Reason

In early 1671, Leibniz was on the threshold of his mature philosophy. In the essays and letters written between May 1671 and the end of the year, there is evidence that he was prepared to use each of the sub-theses of Preestablished Harmony to solve specific theological, epistemological, and metaphysical problems. Neither Complete-*Ratio* Phenomenalism nor the Complete-*Ratio* Theory of Substance nor (Strong) Parallelism popped full-grown from his head. Rather, these doctrines developed piecemeal out of his original Platonist and Aristotelian assumptions as the best solutions to the problems left unsolved in the spring of 1671.

The evidence for Preestablished Harmony in sections 2 and 3 has been mostly circumstantial. None of the texts analyzed is either clear or complete. The notes are a hodgepodge of reflections and reformulations, and even the letters cannot stand on their own. For example, in the letter to Johann Friedrich on resurrection and related topics, Leibniz makes some baffling remarks about substance; he presents some equally abstruse comments about the Eucharist in a letter to Arnauld. Because neither of these letters is explicit about Leibniz's underlying assumptions, it is not surprising that scholars have discarded such texts as "provisional" juvenilia.⁷³ What I have attempted to show in this chapter is that when we place these writings in their appropriate philosophical and textual circumstance, we are able to see Leibniz struggling to formulate his original version of Preestablished Harmony. To be precise, I do not intend that any single text be used as evidence to stand on its own as proof of Preestablished Harmony. In each case, the text is too obscure and its doctrines too underdeveloped. But I do propose that when we take seriously the problems that most interested Leibniz during the period, make a close comparison of the texts with one another, and

73. Beeley, "A Response," 74.

apply the full weight of the *Metaphysics of Substance* and *Metaphysics of Divinity* to these writings, they give us good reason to believe that Leibniz had invented all the sub-theses of Preestablished Harmony by the summer and autumn of 1671.

In his mature writings, Leibniz constantly emphasizes the importance of the Principle of Sufficient Reason to his philosophy. He frequently describes it, along with the principle of contradiction, as one of his “two great principles.”⁷⁴ In 1671, although the Principle of Sufficient Reason has not yet acquired its prominence among his assumptions, Leibniz begins to take it more seriously as a central tenet in his thought. I would like to speculate now that as Leibniz began to rethink the details of his philosophy in an attempt to solve the problems that he faced in early 1671, he became more inclined to see the Principle of Sufficient Reason as a means to resolve these difficulties. Let me explain. According to my account of Leibniz’s philosophical development, there were two prominent difficulties to overcome in early 1671. First, because he had transformed the passive principle in nature into collections of mind-like substances, he had to conceive a way to make such substances interrelated. The conjunction of (Strong) Parallelism and the Complete-*Ratio* Theory of Substance provides such a conception. Second, because he had come to see that there was not a tidy causal story to tell about the relation between the real objects in the world and our experience of them, he was keen to construct a sufficient cause of the sensory phenomena. Both of these solutions promote the importance of the Principle of Sufficient Reason in that each makes the individual substance the sufficient reason for all its states and features.

Let’s briefly consider the place of the Principle of Sufficient Reason in Leibniz’s thought in 1671. At the end of chapter 2, I noted a tension between the Principle of Sufficient Reason and the Principle of Causal Self-Sufficiency. While Leibniz was committed to the Principle of Sufficient Reason and the fact that for every substantial feature *f* of a substance *S*, there was a complete *ratio*, he was not ready to assert that the complete *ratio* had to exist in the nature of *S*. That is, he was not ready to accept the Complete-*Ratio* Theory of Substance. A problem arose because, following the Principle of Causal Self-Sufficiency, if the complete *ratio* for every *f* of *S* was not contained in *S*, then *f* could not be said strictly to belong to *S*. In the discussion of Leibniz’s Emanative Creation Story in chapter 6, I noted that it was possible to hold the Principle of Sufficient Reason, to assign a complete concept to every substance and yet to think that substances causally interact. But I also noted that the coherence of this position depended on the perfect coordination among substances. That is, there could be a complete concept for every substance, although each interacts causally with others, just in case the set of instructions that God gave each substance was in perfect coordination with the instructions given all the other substances with which it corresponds. In this case, each substance could act out

74. For example, see G VI 127, 413–14, 612; G VII 309.

its set of instructions and yet interact with other substances. To make the point another way, the complete concept will apply to the substance (that is, the predicates contained in it will be truly predicated of the substance) if and only if the instructions in that substance are perfectly parallel to the instructions in all the substances with which it interacts. Nor did the development of the Second Theory of Corporeal Substance in 1670 change any of this. Although the active principle in the corporeal substance was radically transformed in 1670, Leibniz continued to accept the Principle of Sufficient Reason, the completeness of the concept of every substance, inter-substantial causation, and (Weak) Parallelism among substances. To make the point dramatically, prior to mid-1671, although Leibniz was committed to the Principle of Sufficient Reason, he was not prepared to make each corporeal substance the sufficient reason for all its features; in the second half of the year, he was.

Leibniz's views about the activity of mind went through a similar revision between early and late 1671. In 1670, he defines the thinking of conscious minds in terms of a harmony of endeavors. As explained in section 4 of chapter 4, the difference between conscious and unconscious minds is that the endeavors of the former persist so as to form a harmony. According to Leibniz, the thinking of conscious minds consists in this harmony. Moreover, as noted in section 1 of chapter 6, Leibniz articulates a theory of Reflective Harmony in 1670 according to which each human mind reflects all the others. For our purposes here, it is especially important that prior to 1671, Leibniz is almost silent about the close unity among non-human substances. That is, he does not extend the Platonist views about universal sympathy and Reflective Harmony to all substances. There are no texts that attribute Reflective Harmony to non-human substances, nor are there any that discuss the sympathy among creatures. In fact, except for his notes on Bisterfeld, Leibniz's comments about sympathy are restricted to the use of the notion in medical and chemical contexts.⁷⁵ As interesting as these comments are, they do not apply to the interrelations among all creatures. By the second half of 1671, however, the activity of substances has shifted and expanded. There are three noticeable changes: the activity of minds is now primarily described in terms of "action on itself," minds are suddenly supposed to perceive harmony, and a version of Reflective Harmony has been extended to all substances. The point that I want to emphasize here is that at the center of these changes stands the Principle of Sufficient Reason. By the end of 1671, each mind contains the sufficient reason for all its activities, perceptions, and states.

As evidence for the new status that the Principle of Sufficient Reason had for Leibniz at that time, I offer a note entitled *Demonstration of first propositions*. In this essay, which was written between the autumn of 1671 and early 1672, Leibniz discusses some of his first truths and then offers demonstrations of them. We find Leibniz's first reference to the Principle of Suf-

75. See VI i 157.

ficient Reason as a primary principle, his first use of “sufficient” in describing it, and his first demonstration of it. He writes:

There is nothing without a ratio, or [seu] everything that is has a sufficient ratio.

Definition 1: A sufficient ratio is that which having been given the thing is.

Definition 2: A requisite is that which having not been given the thing is not.

Demonstration: Everything that is has all its requisites. For when one requisite has not been given, the thing is not (by def. 2). When all requisites have been given, the thing is. For if the thing is not, then something will be absent by which it is less, that is, the requisite. Therefore all the Requisites are the sufficient reason (by def. 1). Consequently, everything that is has a sufficient *ratio*. Q.E.D.

For every created thing, whether a substance or a state of substance, it has a set of necessary and sufficient conditions. In other words, “[t]here is nothing without a *ratio*, or everything that is has a sufficient *ratio*.”⁷⁶

It is noteworthy that there is neither causal language nor any reference to activity in Leibniz’s original argument for the Principle of Sufficient Reason. The entire argument is presented in terms of the necessary and sufficient conditions for the existence of something. In section 2, we discovered Leibniz’s Complete-*Ratio* Phenomenalism in an essay entitled *On endeavor and motion, perceiving and thinking*. According to Leibniz there, for example, “Whatever exists is perceived,”⁷⁷ where the idea seems to be that there are two sorts of things in the created world: those that perceive and those that are perceived. If we apply this ontology to Leibniz’s demonstration of the Principle of Sufficient Reason, it would seem to follow that for everything in the world that is perceived, there is a sufficient reason for it and moreover, that the sufficient reason must be in the perceiving thing. If we place this conclusion within the context of Leibniz’s Emanative Harmony in general and his Emanative Creation Story in particular, then it would follow that for every thing that perceives, there is a sufficient reason for it and, moreover, the sufficient reason must be in God. Once the Principle of Sufficient Reason is applied to the products of the active principle in nature, the two-level emanative hierarchy noted in section 2 follows easily.

As a conclusion to these comments about the role of the Principle of Sufficient Reason in Leibniz’s philosophy in 1671, I want to note what a remarkably small step it was from his original metaphysics to Preestablished Harmony: the Complete-*Ratio* Theory of Substance amounts to the application of Principle of Causal Self-Sufficiency to all substantial features, while the (Strong) Parallelism discovered here is itself closely related to Leibniz’s original understanding of Emanative and Reflective Harmony. In brief, Leibniz’s original assumptions contain all the necessary materials for Preestablished Harmony. When Leibniz brought the full force of his Aristotelian and Platonist assumptions to bear on the problems that most concerned him, he seems to have chosen to solve those problems by placing the sufficient reason for every state and activity of a substance in the substance

76. VI ii 483. 77. VI ii 282.

itself and by making the totality of substances a perfectly harmonious emanation of God.

In summary, none of the texts that I have discussed in this chapter contains hard evidence of Preestablished Harmony. If there were clear and explicit evidence, then scholars would have noticed the development of the doctrine long ago. But when a thorough survey of the writings of 1671 is made within the context of the sundry problems that concerned Leibniz during the period, and when we place the discussion of those problems against the background of his *Metaphysics of Substance* and *Metaphysics of Divinity*, the result is an impressive amount of evidence for the conclusion that, by the second half of 1671, Leibniz had invented his original version of Preestablished Harmony.

Preestablished Harmony, late 1671 – early 1672

Sometime between the middle of 1671 and his departure for Paris in March 1672, Leibniz took notes on a book written by the English philosopher, John Wilkins. The book, entitled *Essay towards a Real Character and a Philosophical Language*, is a hodgepodge of various topics concerning language, with a final section on the universal characteristic. As the title page announces, the author is Dean of Ripon and a member of the Royal Society; in his book, he intends to give a “general Scheme of things.” The notes that Leibniz took on the book and that the Academy editors have entitled *Studies on the universal characteristic* bear little resemblance to anything in Wilkins’ text. Although Leibniz accepts the classification scheme used in the first chapter of the *Essay*,¹ his proposals have nothing else in common with those of its author. Whereas Wilkins begins by defining ‘Genus’ and ‘Species,’ Leibniz begins with ‘Something (*Aliquid*)’ and ‘Nothing (*Nihil*).’ Whereas the former offers lists of synonyms and only the briefest of explications, the latter gives relatively carefully wrought definitions. Nor do the proposals in the remainder of Wilkins’ book bear any similarity to those of Leibniz. The claims in Leibniz’s notes are entirely his own and owe nothing to Wilkins.

The definitions in the *Studies on the universal characteristic* are important: they offer a fascinating survey of Leibniz’s metaphysics at a crucial point in his philosophical development; they imply a commitment to Preestablished Harmony, and they suggest an elaborate metaphysics based on that commitment.² In this chapter, section 1 contains a brief commentary on the most important of the definitions in the *Studies on the universal characteristic*, while section 2 offers speculations on the metaphysical implications of these proposals. In section 3, there is a discussion of why Leibniz was not more explicit about his dramatic metaphysical doctrines in the months before his departure for Paris.

1. *Studies on the universal characteristic*

The text of the *Studies on the universal characteristic* consists of more than a hundred definitions that cover a variety of areas and that define somewhat mundane terms like ‘augmentation,’ ‘reparation,’ and ‘judge.’ For our pur-

1. Nor is this scheme highly original. Wilkins’ section headings are *General Notions, Differentiae, Modes*, and so on.
2. It is striking that none of the recent studies of Leibniz’s thought, even those that analyze

poses here, I have gathered together the definitions and related marginal comments of nineteen of these.³ For the sake of convenience, these have been numbered and placed in an order that makes their interrelations as perspicuous as possible. In other words, among the many proposals that are organized under several separate headings, I have culled and arranged those that deal with metaphysical topics. These are worth an in-depth analysis. Because much of the terminology in Leibniz's definitions is unfamiliar and because my strategy is to unpack only the most obvious implications of his proposals, the definitional dissection in this section will be rough going. In the next section, however, I will use the results of this analysis both to answer the questions that surround the definitions and to construct the dramatic details of Leibniz's original theory of Preestablished Harmony.

It is striking that Leibniz begins this long list of definitions with a distinction between something and nothing,⁴ and very quickly turns to the definition of existence:

[1] "An *Existent Thing* is the distinct sensibility of something." In the margin, Leibniz adds: "that is, an *Existing Thing* is what is able to be sensed or perceived distinctly . . . in much the same way that *Being* is able to be conceived distinctly."⁵

Leibniz appears to distinguish here between being and existence, where the former concerns what is conceivable and the latter concerns what is sensible. Within this context, he offers two different ways of defining substance:

[2] "A *substance* is something of which there is either action or passion. Or rather: it is whatever is thought absolutely and completely."⁶

In chapter 6, section 3, I attributed to Leibniz the Emanative Creation Story, which I summarized in five parts.⁷ In brief, the second part claims

Leibniz's early works, pays any attention to the definitions listed here (see e.g. Wilson, *Leibniz*; Adams, *Leibniz*; Beeley, *Kontinuität und Mechanismus*). Nor, as far as I know, do any earlier studies.

3. According to the Academy editors, the marginal notes on this text date from the same period as the text itself, except for a few which may have been added later and which they mark as such (as do I here). See VI ii 487.
4. I ignore some interesting material here. But part of Leibniz's account of the difference between something and nothing on the one hand and the real and apparent on the other is worth quoting. He writes: "*Something* is whatever can be thought. *Nothing* is whatever can be named, but cannot be thought," that is, where there is "a name without a thing." In the margin, he adds: "If A is B or C or D, and so on, then it is called *Something*. . . , if N is not A and N is not B and N is not C and so on, then N is said to be *Nothing*. . . ." Among the things that can be thought, some are "merely apparent" and some are not. "The *real* is what is not merely apparent," while "[t]he *apparent* is that of which the sensibility is not distinct."
5. VI ii 487. For the sake of simplicity, I want to avoid a discussion of Leibniz's notion of distinctness here, and so I have omitted part of the definition in my translation. However, the entire definition as it appears in the Academy edition is: (*Existentia*) est alicuius sensibilitas distincta seu *Existens* est, quod distincte sentiri sive percipi potest[,] distincte id est adhibitis distinctis conceptibus quemadmodum *Ens* est quod distincte concipi potest.
6. VI ii 488. The Latin is: *Substantia* est cuius aliqua actio vel passio est. An potius: quicquid cogitatur absolute sive complete.
7. For a summary, see the Appendix. Part II. ch. 6.

that for every created substance, there is a complete concept, while the third part attributes the ontological correlate of the concept to the substantial form of the substance. That is, the second part treats the conceived essence of the individual substance and the third concerns the existing active nature. Similarly, definition [2] contains an account both of the concept and of the active thing. Leibniz offers no details in his notes on Wilkins' text, but against the background set in chapter 6 it is reasonable to assume that it is the complete concept that is absolutely and completely thought. But what about substance as the active thing in nature? The suggestion of the first claim in [2] is that each state of substance is either an action or a passion. Leibniz asserts in some marginal notes that "passion is variation which by its nature diminishes perfection" from which it is supposed to follow that God is the only substance that does not participate in passivity. Accordingly, [3] "there is an uniquely active thing, namely, God."⁸

Among the substances in the world, only God lacks passivity and imperfection. That is, God is the only substance that merely acts and never suffers. Given Leibniz's *Metaphysics of Substance*, this suggests that only God does not contain a passive principle. By such means, Leibniz confirms one of the claims in the (early 1671) *Passive Principle Assumption* as well as in the (mid-1671) *Substantial Form Assumption*, namely, that every created active principle is attached to a passive principle.

In *Studies on the universal characteristic*, Leibniz suggests that the perfection of a substance is intimately related to whether it acts or suffers.⁹ But how? Leibniz defines action and passion:

[4] "An *action* is a state of one thing that a change in another follows," while "a *Passion* is the change itself." In marginal notes Leibniz says: action "is the conservation or the increase of the perfection of the thing or rather it is variation that occurs with the perfection perserved," while "passion is variation that by its nature diminishes perfection."¹⁰

The implications of definitions [2], [3], and [4] are important. One of the claims of the *Supreme Being Assumption* is that each of the features of unity, self-sufficiency, perfection, and reality is a function of the other. Leibniz is explicit here about the close relation between the perfection of a substance and its activity. The suggestion is that the *Supreme Being* is the only purely active substance because it is the only perfect substance. All other substances partake in imperfection, which is rooted in passivity and is somehow the opposite of activity. The definitions also suggest that the single most important feature of a substance is its level of perfection, that its level of perfection can fluctuate from moment to moment, and moreover that those fluctuations are (somehow) related to whether the substance is active or passive. That is, the perfection of a created substance is variable and the degree of its perfection is somehow related to its degree of activity and pas-

8. VI ii 489. 9. See VI ii 488. 10. VI ii 489.

sivity. Confirmation of the close relation between perfection on the one hand and activity and passivity on the other occurs in a passage from the sixth note from the *Elements of natural law*, which we quoted in section 2 of chapter 8:

To have real knowledge is to know what things are able to act or to suffer. . . . [N]o one is able to have real knowledge of a single thing, unless he is most wise, that is [seu], has real universal knowledge. What it is to have real knowledge, what is called in Latin *intelligere*, is to read the inner natures.¹¹

Placing the interpretation of this passage offered in chapter 8 next to definitions [2], [3], and [4], something like the following emerges. The essence of the Supreme Being constitutes the inner nature of every substance, and this is what we know when we know that nature. However, the divine essence in each substance is able to be instantiated more or less clearly, and the clarity of the instantiation of a substance is related to its perfection, which itself is related to its activity and passivity. Among other things, it follows that to know the nature of an individual thing is to know its perfection and hence whether it is “able to act or suffer.” We have here a position that looks very much like a combination of the Supreme Being Assumption and the Creaturely Inferiority Complex: each individual substance, as an inferior instantiation of the divine essence, can express or instantiate that essence more or less clearly and, moreover, in some yet unspecified way, its level of perfection and clarity is related to its activity and passivity.

But how? Within the context just set, definition [4] suggests one of the most important points in Leibniz’s *Studies on the universal characteristic*, namely, that the actions and passions of a substance ultimately reduce to fluctuations in the clarity of its instantiation of the divine essence. That is, for any substance S, its actions and passions are entirely explicable in terms of shifts in the clarity of its instantiation of the (selected) divine essence. For help with this idea, let’s return to the analogy of propositions in a story. If we think of the divine essence instantiated in the world as a set of propositions in a story that may be translated into different languages and if we think of each substance as a translation of the story in some language, then it makes sense to evaluate the relative clarity of a translation. While each translation is a rendering of the story, some versions will catch its nuances and some will not. Further, let’s suppose that there can be radical differences in the clarity of translations so that the clearest will be very clear and the least clear will be very obscure. Let’s assume also that the sentences within a translation will vary in clarity so that one sentence will render its corresponding proposition very accurately while another sentence in the same story will render its proposition less accurately. In this case, each sentence can be judged both objectively (where the question is: how clear is it really?) and relative to other sentences in the same story (where the question is: how clear is it relative to the others?). It would follow that the least

11. VI i 484. For the Latin, see ch. 8, n. 38.

clear sentence in one translation could be clearer than any of the sentences in another translation. For example, if we assume that the Norwegian version is a clear translation of the story while the English is entirely unclear, then it is possible for the least clear of the Norwegian sentences to be much clearer than the clearest of the English ones. Following this analogy, each substance is like a translation in that it is a more or less clear rendering of the divine essence; and moreover, each state of a substance is like a sentence in the story in that it is a more or less clear instantiation of that aspect of the divine essence. Like the translation of the story, the perfection of the substance will be determined by its overall clarity. But also like the translation, the perfection of the substance will vary: in the same way that each sentence can be more or less clear relative to others in the same story, so can each state of a substance be more or less perfect compared with other states. Furthermore, like the translations, the substances might differ radically in clarity or perfection, so that a substantial state that is unclear relative to other states of its substance might still be clearer than any of the states in another substance.

In order to make explicit another point about the perfection of substances, let's push the analogy a bit and pretend that clarity is less vague a predicate than it is. Let's suppose that, for each sentence, it is possible to categorize it as definitely in the clear range or not. In this case, each sentence falls either in the clear or in the unclear category, although in each category there are degrees. Following this idea, each state of a substance falls either in the acting or suffering category. The implication is that the perfection of each state is a function of its level of clarity, whereas the perfection of the substance overall is a function of the level of clarity of each of its states. But there is an important disanalogy between the sentences of a translation and the states of a substance. Whereas the level of clarity of the sentences in a story would not (in any obvious way) be dependent on one another, definitions [2] and [4] imply that the states of a substance are so dependent. That is, for every state f of a substance, the perfection of f will depend both on the level of perfection of the previous state and on whether f is an active or passive state. So, for a substance S with a state f_1 , the degree of perfection of its next state, f_2 , will depend (at least) on the perfection of f_1 and whether or not f_2 is a state of acting or suffering. We will return to some of these points later.

Besides divulging some of Leibniz's ideas about the relation between perfection, clarity, activity, and passivity, definitions [2], [3], and [4] are also important because they suggest a number of details about how the correspondence relation between corporeal substances is supposed to work. In other words, these definitions in the *Studies on the universal characteristic* go well beyond the textual materials discussed in the last chapter. They describe how the states of a corporeal substance S_1 might be understood to parallel those of a substance S_2 without there being any real causal interaction between S_1 and S_2 . The definitions are explicit about the following. Each substance is capable of acting and suffering. An action in S_1 is a state of S_1 that

is followed by a change in S_2 , which is (as will be clear below) also a state. There is no mention of direct causal interaction. Rather, S_1 and S_2 are constructed so that their states correspond to one another, where the correspondence relation is explained entirely in terms of degrees of perfection.

But some questions arise. According to the Principle of Substantial Activity, anything that has a principle of activity is itself a substance and therefore the dominant mind or substantial form F in S is a substance. In this case definitions [2], [3], and [4] would seem to imply that F by itself is able to act and suffer and to have states as well as a level of perfection. How are we to understand these features of the substantial form or dominant mind in a corporeal substance? The next definitions offer some help.

[5] "A *state* is an aggregate of *accidents* or [seu] contingent predicates."¹²

[6] "An *accident* is a mode of substance by which it can be thought."¹³

[7] "A *mode* is a state of change or [seu] of action or passion."¹⁴

[8] "A *quality* is a mode by which a thing is thought changeable or [seu] is able to act and to suffer [pati]. It is that by which a thing is thought not in relation to sense, but to intellect."¹⁵ In a marginal note, Leibniz adds: "There is a principle of things that concerns change or Quality, [namely], nothing exists [esse] without a *ratio*."¹⁶

It is impossible to explicate the precise interrelations among these provocative definitions since their key notions are defined in terms of each other.¹⁷ Yet, as a group, they say a good deal about Leibniz's general approach to causation and change. They suggest that in the period of late 1671 to early 1672, he is interested in constructing a logical conception of substance. More precisely, he is interested in defining substance as what is in theory intelligible and as what contains the necessary and sufficient conditions for all its states or features, whether active or passive. In section 4 of chapter 8, I discussed an essay entitled *Demonstration of first propositions*, which was also written between the autumn of 1671 and early 1672, which contains Leibniz's first demonstration of the Principle of Sufficient Reason, and which suggests that a substance contains the necessary and sufficient conditions for all its states. One of the striking things about Leibniz's argument for the Principle of Sufficient Reason in that essay is that there is neither causal language nor any reference to activity. The entire argument is pre-

12. VI ii 499

13. VI ii 488. In the text, Leibniz offers an account of substance and then describes accident, quantity, and quality in terms of mode, where the idea clearly is that they are modifications of substance. We have to wait for several pages until he defines 'mode.' In an attempt to make more perspicuous the exact relations among these definitions, I have put them in their present order.

14. VI ii 499

15. VI ii 488. Leibniz went on to add 'imagination' to 'intellect' here.

16. VI ii 489. Leibniz's account of quality here parallels his definition of quantity, which is my definition [19].

17. That is, a state is defined in terms of accident, which is defined in terms of a mode, which is defined in terms of a state. Nor do the other parts of the text offer an easy escape from this circle. As I will argue, however, there is a coherent metaphysics that underlies these definitions.

sented in terms of the necessary and sufficient conditions for the existence of something. In chapter 2, I claimed that the conjunction of the Complete-*Ratio* Theory of Substance and the Logical and Intelligibility Assumptions entails that, for every state of a substance S, one could in theory articulate and understand the necessary and sufficient conditions of that state and, moreover that those conditions are in the nature of the substance. This is one of the assumptions of the *Studies on the universal characteristic*.

Despite their genuine imprecision, definitions [4]–[8] also offer a rough sketch of substantial change. Since it would be helpful to simplify our terminology and since it is evident that the states, modes, and accidents all belong to and exist in S, let's refer to all of these as *states* of S.¹⁸ The general picture seems to be that each action and passion of a substance S, whether S is a substantial form or corporeal substance, constitutes a change in S and can be thought. Definition [8] implies that a quality somehow underlies the changes in a corporeal substance, and the general suggestion is that the changes in a corporeal substance are somehow caused or produced by something internal to the substance. Other definitions help to fill in the details.

- [9] [a] “*Form* is the principle of qualities or of changeables [seu mutabilium].”¹⁹
 [b] “*Form* is the aggregate of requisite sufficient qualities.”²⁰

It is important that in [9][a], Leibniz first wrote that form is “the aggregate of qualities” but then scribbled ‘principle’ above ‘aggregate.’ Later in the text, he proposes [9][b]. He also offers a two-part account of essence. The first part appears in the text alongside [1], while the second appears in the text with [9][b]:

- [10] “An *essence* is the distinct thinkability of something;”²¹ “*Essence* is the aggregate of requisite predicates.”²²

In spite of the unclarity about the exact relation between a mode, a state, a quality, and an accident, we can construct a fairly precise story about the production of the states of a corporeal substance. Leibniz insists in definition [8] that “there is a principle of things that concerns change or Quality,” namely, that “nothing is without a *ratio*.” He asserts in definition [9] that qualities are “changeables” and, moreover, that the form is the principle of such changeables. The fact that Leibniz corrected himself in definition [9] [a] and insisted that the form is the *principle* and not the *aggregate* of changeables is signifi-

18. It is at this point that the imprecision of [5]–[7] is especially problematic in that there is a genuine unclarity about what is most basic. Of course, one way out of the circle is to assume that there are two different kinds of states, but there is no textual evidence for this.

19. VI ii 492 20. VI ii 499

21. VI ii 487. The Latin as it appears in the Academy text is: (*Essentia*) est alicuius cogitabilitas distincta. Compare this with the definition of *existentia* in [1]: (*Existentia*) est alicuius sensibilitas distincta.

22. VI ii 499. In the text, Leibniz adds a point about affections, but he does not define the latter, so it is not clear what he means. The Latin is: *Essentia* est aggregatum praedicatorum requisitorum, vel affectionum, scil. sufficientium.

cant: as an aggregate of changeables, the form would itself be a changing thing; as the principle of changeables, the form is able to remain their unchanging source. The (mid-1671) Substantial Form Assumption claims, among other things, that the substantial form F in a substance acts through emanation. It is consistent with [9][a] that F is able to remain unchanged and yet be the (emanative) source of its qualities. A slight difficulty arises from the assertion in [9][b] that the form is also “an aggregate of requisite sufficient qualities.” It is not immediately obvious how F is supposed to be both the unchanging source or principle of qualities and the collection or aggregate of the changing things themselves, but it seems clear that each form contains the necessary and sufficient conditions for its all its qualities or states.

But what about corporeal substance? Much of the material in definitions [5]–[10] concerns the substantial form, which is a substance itself and a constituent of corporeal substance. How exactly do its actions relate to those of the corporeal substance? Definition [2] suggests that every state of a substance is either an action or a passion, while definitions [5] and [6] imply that every state of a substance is a mode by which it can be thought. Finally, definition [10] proclaims that the essence of a substance contains “the aggregate of requisite predicates.” Against the background set in section 3 of chapter 8, this claim is particularly interesting. According to the Substantial Form Assumption articulated there, each form contains the ontological correlate of the complete concept; moreover, according to the Prearranged Diffusion Relation, the activity of the substantial form in a corporeal substance S is a necessary condition for the states or features of S. Definition [10] suggests something very similar. The idea seems to be that the form is the ontological correlate of the individual essence or complete concept that contains the predicates which, once instantiated in the form, function as the necessary conditions for the features of S. As we will see later, this is in fact what Leibniz has in mind. For now, it is important to note that the definitions imply a two-tiered explanatory hierarchy with a distinct subject at each level: first, there is an active principle or form that emanates qualities and is such that, for every quality, there is a complete *ratio* that is somehow grounded in the form; second, there is a corporeal substance that is constituted of the form and a passive principle, that has actions and passions, and whose form contributes (somehow) to its substantial states. The general suggestion is that, for each substantial state f of a corporeal substance S, there is a complete *ratio* that is (somehow) in the nature of S (which is constituted of a form and passive principle); and, moreover, for each quality of the form, there is a complete *ratio* in the form itself. Why would Leibniz construct such a two-tiered hierarchy within a single corporeal substance? What motivated him to do so, and how does this work? We will return to these questions in the next section, but first more definitions.

Leibniz defines causation as follows:

[Tentative [11]] “An *efficient cause* is a cause through action. A *cause through emanation* is an efficient cause without a change of itself.”

We need to proceed carefully here. We know from definitions [2]–[4] that all created substances both act and suffer. Definition [11] tells us that among created substances, there are two sorts of causes. In emanative causation, there is no change in the subject. As Leibniz explains, emanation cannot involve a change in the subject since to do so would be to change “its destined journey.” But in efficient causation, the subject is so changed. In order to emphasize the difference, Leibniz argues that because an efficient cause involves a change in itself, an emanative cause cannot strictly be an efficient cause. He concludes: “Therefore there is not an [efficient] cause through emanation.”²³ It will be helpful to emendate [11] appropriately:

[11] “An *efficient cause* is a cause through action. A *cause through emanation* is an efficient cause without a change of itself” [and therefore a cause through emanation is not strictly an efficient cause].

More questions arise: which substances act through emanation, which act efficiently, and how are the two sorts of active things related? Significantly, the example that Leibniz gives of an efficient cause is that of a moving body, where the idea is that when one body causes another to move, there is a change in the former as well as in the latter. The suggestion is that corporeal objects act as efficient causes, while minds emanate. When we combine [4] and [11], the idea seems to be that for two corporeal substances S_1 and S_2 where S_1 acts (efficiently) on S_2 , there is a state in S_1 that is followed by a change of state in S_2 and, moreover, there is a conservation (or increase) of the perfection of S_1 and a diminishing of the power in S_2 . But we have to wonder exactly how this is supposed to work: definition [4] demands that when S_1 acts efficiently, the perfection of S_1 be preserved or increased, and definition [11] claims that there is some sort of change in S_1 . There are other relevant definitions:

[12] “*Acting* is in relation to an object, *making* in relation to an effect, *effecting* is in relation to each of the two, it is making one thing from another.”²⁴ Moreover, Leibniz writes: “An *actuality* [actus] is a present effect” to which he adds in a marginal note “or [seu] the existence of change.”²⁵

The process of making an effect is one of moving from “the possibility of change” to its “actuality.” Furthermore,

[13] “*Producing*” is “making a thing exist, and therefore sensible. Therefore it adds a relation to sense by effecting.”²⁶

As a group, definitions [11]–[13] are remarkable because, although their subject matter concerns the activity, causation, and production of things, they

23. VI ii 490

24. Ibid. The Latin is: *Agere* refertur ad objectum, *facere* ad effectum. *Efficere* ad utrumque, est enim facere aliquid ex aliquo.

25. VI ii 493

26. VI ii 490. The Latin is: *Producere* . . . Est facere rem existere, ac proinde sensibilis. Ad id ergo effectioni relationem ad sensum.

seem carefully constructed to avoid any suggestion of real causal interaction among substances. While they do not explicitly deny such interaction, they suggest that the relation among substances is that of (Strong) Parallelism.

There are other definitions that concern the activity and interrelations among things and that are consistent with both (Strong) Parallelism and Complete-*Ratio* Phenomenalism. Let's consider Leibniz's account of thinking. It is noteworthy that after first writing what had become his standard definition of thinking in the second half of 1671, namely, that thinking "is action on itself," he added some words of emphasis in the margin to produce the following:

[14] "*Thinking* is internal action on itself, perception with reflection."²⁷

In the discussion of *On the incarnation of God* in section 3, chapter 4 and of *On endeavor and motion, perceiving and thinking* in section 2, chapter 8, we saw that for Leibniz, minds always think. We also noted in the latter discussion that Leibniz's description of thinking as "the perception of harmony" strongly suggests Reflective Harmony, where the idea is that every perceiving mind reflects all the others. In *Studies on the universal characteristic*, Leibniz commits himself to the intercommunication of non-human minds. But what sort of perceptions or interrelations do unconscious minds have? In an attempt to answer these questions, we enter the thicket of Leibniz's Platonism and discover his first definitions of sympathy, perfection, and simplicity:

[15] "*Sympathy* is when through the insensible acting or suffering of one thing, the other thing acts or suffers. That is, it is a change of the one in relation to the state of the other, in an insensible way" or, as Leibniz added in a marginal note, "an insensible communication."²⁸

[16] "*Perfection* is whatever is able to do as much as it can." Or, as Leibniz adds in the margin, "Better: Perfection is a grade of reality."²⁹

[17] "*Simplicity* is without the diversity of parts." There are "different grades" of simplicity: "one kind lacks any kind of part" and is "entirely indivisible;" another "lacks dissimilar parts" and can be "more or less" indivisible.³⁰

In definition [15], Leibniz explicitly embraces the unconscious interaction among substances, which was called *sympathy* in the Platonist tradition. As we summarized the doctrine in section 5 of chapter 5, the Relation of Sympathy is such that each created thing (insensibly) corresponds to the states of all the others. As noted, the relation can be more or less strong. Following the Platonist doctrine, Leibniz intends to forge a close link among sub-

27. VI ii 493

28. VI ii 498. The Latin is: *Sympathia* est eorum, quorum uno agente vel patiente insensibiliter alterum agit vel patitur. Seu est mutatio unius ad statum alterius, modo insensibili. In the marginal note, Leibniz writes: *Commercium insensibile*.

29. VI ii 494. The Latin is: *Perfectum* est quicquid tantum potest, quantum potest posse. The marginal note is one that according to the Academy editors, may have been added after Leibniz's arrival in Hanover in 1676.

30. VI ii 494

stances. Before summarizing Leibniz's position, let's remind ourselves that for many Platonists, the close sympathetic relation among created things was supposed to follow from the fact that all products of the Supreme Being are rooted in the same emanative cause whose perfect unity was immanent in each individual thing and in the totality of created things. In a sense, the relation between the One and its products was supposed to entail the relation of sympathy. As Philo so nicely makes the point: by filling "the whole world with himself. . . , he has connected every portion with another portion."³¹ In the *Studies on the universal characteristic*, Leibniz embraces this position. According to definition [15], when a substance acts (or suffers), every other substance with which it has a relation of sympathy acts (or suffers). But definition [15] exceeds mere sympathy. The marginal comment adds another level of connection. According to it, the substances in a relation of sympathy not only insensibly interact, they insensibly *communicate* as well. By such means, Leibniz goes beyond the traditional notion of sympathy. For the first time, he explicitly endorses Reflective Harmony, where the idea is that for any substance in a relation of sympathy with another, it communicates all of its states to the other and in that sense, each substance in this relation reflects the others. A question arises at this point about how expansive we should consider the relation of sympathy or Reflective Harmony. That is, for a substance S, how *far* do its sympathetic and reflective relations extend? I will answer this question and discuss the importance of this doctrine in the next section.

In definition [16], Leibniz embraces the Platonist tenet that there are grades of reality and, moreover, that the grade of a being is entirely due to its perfection. He also connects perfection and power. We will discuss this point in section 2. We also witness Leibniz expanding on a fundamental Platonist notion in definition [17]. According to the Supreme Being Assumption, each of the features of unity (or simplicity), self-sufficiency, perfection, and reality is a function of the other. In definition [17], Leibniz appears to be setting aside unity or simplicity as a feature that is different from the others. According to the Principle of Substantial Activity, the dominant mind or active principle in a corporeal substance is itself a substance. According to panorganism, each corporeal substance is constituted of a substantial form, which is a substance, and a collection of subordinate corporeal substances, each of which is itself a form and collection of subordinate substances. It follows that there are two sorts of substances, namely, mind-like substantial forms and corporeal substances. Moreover, according to the Prearranged Diffusion Relation articulated in section 3 of chapter 8, the corporeal substance is able to shrink and expand in a way that maintains its core and hence its unity. It would appear that Leibniz's definition of simplicity is designed to accommodate these two sorts of substances. In the context of the other definitions, it would be reasonable to suppose that the substantial forms are the things that lack all parts and are

31. Philo, *On the Posterity of Cain* V.14: Yonge 133.

entirely indivisible, while the corporeal substances are the things that have similar parts (namely, the subordinate substances that constitute the passive principle) and that are more or less indivisible. In short, in the second half of 1671, there appear to be two sorts of (created) unities: the unity of minds, which have no parts, and the unity of corporeal substances, which are variable because they have parts or constituents.

There is much more to be said about [15]–[17] and their relation to the earlier definitions. We will turn to some of their implications in the next section. For now, it will be helpful to complete the presentation of the relevant definitions in *Studies on the universal characteristic*. Our final two definitions concern the phenomenal body and its relation to the underlying active reality. According to Leibniz in his notes on Wilkins' book, there are two aspects to every corporeal thing. As active things, bodies are substances. Definition [2] asserts that a substance is "something of which there is either action or passion," while definition [11] claims that an efficient cause is "a cause through action." Leibniz offers a (moving) body as a paradigm case of an efficient cause. Therefore, a body is a substance whose actions and passions are motion. But bodies are also phenomenal objects. Leibniz claims:

[18] [a] "Matter is that by whose change, [although] it remains, something is made. [b] Because matter is the effect, it is the object of acting. The *manifestation* [of the acting] is that whose representation is the object of the thinking. The *subject* [of the acting] is of the form."³²

This definition is less than perspicuous and there are various ways to interpret it. Part [a] implies that there are two aspects to matter: one aspect is such that, by changing, something is made; the other is such that it remains despite the changes. Part [b] also suggests that matter is (somehow) both the subject of acting and the effect, object, and manifestation of acting. But how? I propose that matter is the effect or the object of acting in the sense that it is the phenomenal matter that is produced by the mind that perceives it (consistent with Complete-*Ratio* Phenomenalism) and that is the subject of acting in the sense that it is the underlying active corporeal substance which itself acts and parallels the phenomenal matter (consistent with (Strong) Parallelism).

In section 2 of chapter 7, we saw that for Leibniz in 1670, a body was a collection of extended corporeal substances whose coherence was due to the harmony of their endeavors. By the time Leibniz wrote to Oldenburg in September of that year, he had come to recognize a number of difficulties

32. VI ii 492. The Latin is: *Materia est cuius manentis mutatione fit aliquid. Quod materia est effectus, est objectum agentis. Argumentum est cuius representatio cogitantis objectum est. Subjectum est formae.* The Latin is less than clear. As support of my translation, I would like to note (1) that the context suggests that Leibniz is using 'argumentum' in the sense of a sign or manifestation of something, and (2) that, by placing 'argumentum' and 'subjectum' in the same place in the sentence and by highlighting them both in the same way, Leibniz intends to suggest that the *argumentum* and *subjectum* are related in the way the translation suggests.

clustering around that conception. One of these difficulties is especially relevant here, namely, that the underlying collection of corporeal substances constantly changes while the phenomenal object remains the same. In the letter to Oldenburg, Leibniz fretted about the gap between the underlying reality and the phenomena and proclaimed his desire to analyze more satisfactorily “the causes of the appearances of things.”³³ As noted in chapter 8, this set of difficulties must have seemed particularly severe to someone committed to the Principle of Sufficient Reason. In this context, consider the proclamation that Leibniz made to Johann Friedrich in May 1671:

Neither will what Existence is be able to be defined, nor will it be possible to explain how Existence corresponds to anything unless a Mind is supposed. Oh our abused philosophy! . . . But what Existence is, what has to be superadded to Essence, no one up until now has defined.³⁴

By the time of his notes on Wilkins’ book, Leibniz has worked out a neat solution to the problem. In part [a] of definition [18], he cleverly transforms a standard Aristotelian account of matter as what underlies change and applies it to the phenomenal object. Roughly speaking, for Aristotle and his followers, matter underlies change in the sense that each of the two sorts of change (that is, substantial and accidental) requires a matter “in which” or “from which” change occurs.³⁵ In late 1671, Leibniz reinterprets this relation between matter and change to suit his present metaphysical needs. For Leibniz, the underlying corporeal substance can undergo constant change and yet the corresponding phenomenal object will remain relatively stable. Moreover, Leibniz explains away the gap between the changing substance and the (relatively) stable phenomenal object by giving each substance its own complete *ratio*. As definition [12] claims: “*Acting* is in relation to an object. . . . An actuality [actus] is a present effect.” Within this context, we can take the first claim in part [b] of definition [18] to maintain that the extended phenomenal object is the effect or manifestation of the acting by the perceiving mind. That is, the matter or extended phenomenal object is a present actuality that the perceiving mind causes. Following this interpretation, the second claim in part [b] of definition [18] refers to the underlying acting substance that acts out of its form and whose activities parallel the perceptions of the perceiving mind. On this reading of definition [18], Leibniz is committed to interpreting the phenomenal body as caused by the mind perceiving it and yet in close correspondence to the underlying active corporeal substance. Because he is prepared to sever the causal relation between the changing corporeal substance and the (relatively) stable phenomenal object and then to place the complete *ratio* of the latter in the perceiv-

33. II i 63

34. II i 114. The Latin here suggests more than the English that mind must be made the subject or support of the existence: “ne Existentia quidem quid sit definiri nec quomodo cuiquam competat explicari potest, nisi supposita Mente.” Compare this with definition [1].

35. Surely one of the most concise statements of this point appears in Aquinas, *De Principiis Naturae*, cap. 1.

ing mind, he can explain the changes both in the underlying substance and in the phenomenal object in a way consistent with the Principle of Sufficient Reason. On the side of the active corporeal substance, there is a complete *ratio* for each state of the substance and the Principle of Sufficient Reason is preserved; on the side of the phenomenal object, there is a complete *ratio* for each of the objects perceived in the nature of the perceiving mind-like substantial form and the Principle of Sufficient Reason is maintained.³⁶

But definition [18] is obscure. Are there independent reasons to accept that Leibniz is taking matter to be a phenomenal object which, although caused by the mind perceiving it, corresponds perfectly to an actual corporeal thing? Consider our final definition.

[19] “Quantity is a mode, by which a thing is thought determined, or rather a mode by which a thing is thought a whole.” He explains that a particular figure may change but throughout the changes “quantity remains and the thing can be considered no less a whole.” In other words, he says, “quantity is the very thisness, by which a thing is thought to be a this.” In the margin, he adds: “There is a principle of things which concerns existence or [seu] quantity: [namely] What is is what exists.”³⁷

Again, the definition is less than clear. Let’s proceed carefully. There are three closely related points. First, Leibniz claims that a quantity is a means by which a thing is thought determined, and that it is a mode. Following definitions [5]–[8], a mode is somehow an action or passion and a means by which something is thought. But how? According to definition [8], there are two ways in which something can be thought: it can be thought either “in relation to sense” or in relation “to intellect.” This distinction, along with definitions [18] and [19] brings us to the well-founded phenomenalism of the *Studies on the universal characteristic*. The idea is that for every corporeal substance R, it can be approached in two ways: there is the real R or the R qua active thing, which is the underlying changing thing; and there is the phenomenal R or R qua sensory object, which corresponds to the R qua active thing. The real R qua active thing has an essence that can be approached by the intellect. The R qua sensory object is a mode that is related to R qua active thing and that can be approached “in relation to sense.” Following the uses of the town analogy in the second half of 1671, there is only one real R, although there are “infinite variations which appear.”³⁸ I take it that each of these variations is a mode that is related to the real underlying R, but it is a mode that is “thought” by the perceiving substance. That is, for any substance S that thinks R in relation to sense, R qua sensory object is a state of the mind in S that parallels the underlying active R. For example, when Wanda perceives the kitchen table, the phenomenal object is a state of her mind and was caused by her mind; at the same time, the phe-

36. Also see VI ii 307.

37. VI ii 488. The Latin of the marginal note is: Principium eorum quae tractant de existentia seu quantitate est: Quod est id esse.

38. II i 170. For a discussion of this analogy, see ch. 8, sect. 1.

nominal object is a mode that is related to the real changing table in that the phenomenon is what the table is in relation to sense.

The second point to emphasize about definition [19] is closely related to the first. In the marginal note on his definition, Leibniz insists that there is a principle or source of things that concerns existence or quantity. The full force of this claim is most easily felt when we place definition [19] next to definition [8] and compare the marginal claims of each. According to definitions [19] and [8], which appear together in Leibniz's notes, there are two principles of things. Leibniz writes in [19]: "There is a principle of things that concerns existence or [seu] quantity: [namely] What is is what exists [esse]." Whereas, in [8], he claims: "There is a principle of things that concerns change or Quality, [namely] nothing exists [esse] without a *ratio*."³⁹ These claims are less than clear and can be read in several ways. Definition [13] offers some help: it proclaims that producing something "is making a thing exist, and therefore sensible"; it is to add "a relation to sense." Following this suggestion, we can read the claims as follows: the perceiving mind F itself functions as the principle or source of what has existence in the sense that what exists for F is what is sensible to F; and, moreover, there is a *ratio* in F for what F senses. We can turn to our discussion of *On endeavor and motion, perceiving and thinking* for support of this interpretation. In the discussion of that essay in section 2, chapter 8, we found a similarly obscure comment: "There is a *ratio* why something is, [namely,] because it already is; or because there is a principle of harmony. From the first [follow] the actions of bodies; from the latter [the actions] of minds."⁴⁰ I interpreted this claim in the following way: for any particular body that a mind perceives, there is a complete *ratio* for why the mind perceives the body now. This complete *ratio* is in the nature of the mind that has the perception. In brief, by the second half of 1671, it is Leibniz's view that for some existing object, it exists for F just in case F perceives it (according to definition [1], F must sense it "distinctly"); moreover, there is a complete *ratio* in F for why F perceives what it does.

The third point to emphasize about our final definition is also relevant to definitions [18] and [1]. In his *Studies on the universal characteristic*, Leibniz sets his definitions of matter, quantity, and existence against his definitions of form, quality, and essence. I propose that each of the former concerns the phenomenal object, while each of the latter treats the underlying active substance. According to definition [1], what exists is what is capable of being "sensed or perceived distinctly," and, following definition [13], what exists is what is sensible. When we piece together definitions [1], [8], [9], [13], [18], and [19], we uncover the fact that for perceiving minds, the underlying and real mind-like substances *exist* only as extended phenomena. That is, although a corporeal substance R exists as a panorganic collection of mind-like changing realities, the only access that any mind F has

39. VI ii 489. 40. VI ii 284.

to R is as a phenomenal object produced by F. It follows that for Leibniz in late 1671, matter, quantity, and existence are first and foremost notions that apply to phenomenal objects which are produced by the perceiving mind but which nonetheless stand in close correspondence with the underlying active substances. Every created substance is both an active mind-like reality in the world and a phenomenal object in the mind of some perceiving subject.

Before turning to a more thorough-going explication of the metaphysical implications of *Studies on the universal characteristic*, it is important to insist that these definitions not be taken to be hastily written thoughts that were soon discarded. On the contrary, most of the claims made in definitions [1] through [19] should be seen as the culmination of one of Leibniz's major projects in the second half of 1671. According to my developmental story, it was May 1671 when some of Leibniz's metaphysical ideas about substantial matters began to shift. It should not come as a surprise to discover, therefore, that over the next few months he tinkered with a set of definitions that attempt to define precisely the activity and interaction among substances. The main part of this work appears in the *Elements of natural law* where the context is an ethical one and where the concern is primarily to explain goodness, justice, and wisdom. The definitions in *Studies on the universal characteristic* are the result of Leibniz's earlier attempts to formulate such claims. These definitions are more carefully wrought and more complete than the earlier versions.⁴¹ Furthermore, Leibniz must have been relatively pleased with this final set of definitions: he did not attempt another version. Instead of significantly revising them, he chose instead to refine the ones in his notes on Wilkins' book. Given how rarely Leibniz returns to edit his personal notes, it is striking that he made (at least) two sets of emendations on these definitions and that one of these slight revisions might have been made several years later (that is, after his arrival in Hanover in late 1676). Nor do his emendations suggest a desire to alter the sense of the original claim; rather, Leibniz's changes are mostly marginal additions which clarify or develop his original point. These facts suggest that there is good reason to take these nineteen definitions in *Studies on the universal characteristic* as a summary of Leibniz's metaphysical views in early 1672.

2. Metaphysics of *Studies on the universal characteristic*

There is good reason to believe that Leibniz composed the *Studies on the universal characteristic* within weeks of his departure for Paris. In the last chapter, we uncovered evidence strewn across a number of texts that by the second half of 1671 he had embraced the Complete-*Ratio* Theory of Sub-

41. Compare the definitions presented here to those at VI i 474, 477, 480ff. While the Academy editors place the latest of the notes for *Elements of natural law* (i.e., the sixth note) at the end of 1671, they think that the *Studies on the universal characteristic* might have been written

stance, Complete-*Ratio* Phenomenalism, and (Strong) Parallelism. Before his journey to Paris, it would not be surprising for Leibniz to attempt to tie together the various strands of his newly developed doctrines. That he does this in his notes on Wilkins' book seems clear. Despite their obscurity, the nineteen definitions articulated in section 1 lay the groundwork for a metaphysics that comfortably contains all the sub-theses of Preestablished Harmony.

In this section, I offer an interpretation of that metaphysics. Some of what I say here is speculative in the sense that my claims exceed what is strictly implied by the definitions. It is undeniable that for several of the nineteen definitions displayed, there is more than one plausible interpretation. But it is equally clear that when we place Leibniz's definitions as a group next to other important writings of the period (especially the letters to Johann Friedrich and Arnauld of 1671) and when we situate them within the philosophical context of Leibniz's Aristotelian and Platonist assumption, an elegant system emerges with Preestablished Harmony at its core. My goal here is to construct an interpretation that is consistent both with all nineteen definitions articulated in the last section and with the textual and philosophical context displayed in previous chapters. While I fully admit that some of this textual material might be explained in other ways, I submit my interpretation as the hypothesis that best explains the (textual) phenomena. The speculations that I make are attempts to fill in the gaps left by Leibniz. Two facts lend support to the general account offered here: it successfully explains all the important textual material and its main features can easily be seen as an original version of the mature philosophy of Preestablished Harmony.

Before indulging in details, it will be helpful to offer a general picture of the most important metaphysical implications of our definitions. The ontology of the *Studies on the universal characteristic* is straightforward: there is God, who is the only fully active thing; there are created corporeal substances which both act and suffer; and within those corporeal substances are mind-like substantial forms which are also substances. Each creature can be approached as an essence available to the intellect or as an existing thing available to the senses. The conceived essences are the equivalent of complete concepts in Leibniz's mature writings in that they contain all the predicates that can be truly predicated of a subject. Each substantial form or dominant mind is an active principle and an instantiated (selected) divine essence. Each substance, whether a mind-like substantial form or corporeal substance, has constantly changing states. Some of these changes are actions; some are passions. There are two sorts of causes, namely, emanative and efficient, and apparently, the former is available to God and minds, while the latter is the exclusive capacity of corporeal substances. There is a relation of sympathy and Reflective Harmony among all creatures. The pas-

just before Leibniz's departure for Paris in March 1672. It is also important that Leibniz returns to some of these definitions throughout the period 1677–1686. See VI iv [A] 27–53.

sion or suffering in a substance is roughly the opposite of action: what is active conserves or increases its perfection; what suffers decreases its perfection. When a substance acts as efficient cause, there is a change in it although its perfection is preserved; when it suffers, its perfection is diminished. That is, the correspondence relation between an efficient cause and its effect is as follows: when a substance S in state f_1 acts efficiently on a substance R, in state r_1 , the perfection of f_1 is preserved in f_2 , while the perfection in r_1 is diminished in r_2 . There has been no genuine causal interaction between S and R and yet their states have corresponded.⁴² However, in the correspondence relation of sympathy, the substance does not change in acting, but insensibly communicates its present state of acting or suffering to every other substance.

It is appropriate to consider the general account just offered as the most important data on which the interpretation of this section is based. But there are some questions that need to be addressed before a full account of the metaphysics of the *Studies on the universal characteristic* can be offered. In section 1, the analysis of the definitions was incomplete in that it left some matters unresolved. Let's consider the most important of these in turn.

Purity of mind and changeability of substance

One of the more curious questions to arise in the analysis of Leibniz's definitions involved the fact that definitions [1]–[10] implied a two-tiered explanatory hierarchy with a different subject at each level. Roughly the idea seems to be that for each state f of a corporeal substance S whose nature is constituted of a form F and a passive principle, the complete *ratio* for f is somehow contained in the nature of S; moreover, for every quality of F, the complete *ratio* for the quality is contained in F. Concerning definition [9], there was a closely related question about how the form can be both a principle and an aggregate of qualities. Let's answer these questions now. As it turns out, this two-tiered theory of substance is a more detailed version of Leibniz's Theory of Corporeal Substance, as articulated in chapter 8. It is also an enormously clever way of constructing a Complete-*Ratio* Theory of Substance that comfortably accommodates Leibniz's Platonist and Aristotelian assumptions. Let me explain.

It follows from the Principle of Sufficient Reason that there will be a complete *ratio* for each state of a corporeal substance S, and it follows from

42. In an attempt to explicate "the common sense" notion of cause, Leibniz acknowledges that a cause must pre-exist its effect, but only in a limited sense: because the cause and effect can be simultaneous, the cause is prior only in nature. Leibniz explains in a marginal note that the cause is a necessary but not a sufficient condition. The reason for this, he suggests, is that the efficacy of the cause depends on "this state of things, here and now." In some cases, he notes, homicide will lead to punishment, in other cases it will not. The implication is that, in this common sense notion, the cause is only one of a number of factors that contribute to the effect. The latter he defines provocatively as "the requiring thing itself [ipsum requirens]" (VI ii 489).

the Principle of Causal Self-Sufficiency that a state f of S will not strictly belong to S unless the cause and explanation of f is grounded in the *nature* of S . According to Leibniz in late 1671, the states of corporeal substances change constantly. If we suppose that Leibniz intends to construct a Complete-*Ratio* Theory of Substance, then it will be necessary for him to construct the nature of S so that it can function as the complete *ratio* for all of its states. Some grave difficulties arise at this point, which concern a tension between Leibniz's Platonist and Aristotelian assumptions. I propose that Leibniz was motivated to construct this two-level theory of substance partly in order to resolve this tension.

Since it follows from the Principle of Sufficient Reason that there will be a complete *ratio* for each of the changing states of a corporeal substance S and since it follows from the Principle of Causal Self-Sufficiency that the complete *ratio* will be contained in the nature of S , it also follows that in order to construct a Complete-*Ratio* Theory of Substance, Leibniz must explain how the complete *ratio* for every state of S is contained in the nature of S . However, as I argued in section 1 of chapter 4, f will not belong to the nature of S unless f results from the genuine union of the active and passive principles, where the active principle somehow organizes the passive principle. Since, according to Leibniz in the *Studies on the universal characteristic*, the states of S constantly change, it would seem to be necessary for the mind or active principle in S to act constantly through the passive principle so as to produce those states. To be precise, for every state f of S , there has to be a related action or change in S 's mind-like substantial form. On such an account, the mind would have to be changing constantly. But given Leibniz's Platonist assumptions, this consequence is untenable. As I argued in section 2 of chapter 6 and as the (mid-1671) Substantial Form Assumption suggests, created minds are like the divine mind in that they are self-sufficient unities whose actions are modeled on divine emanation. It follows from this assumption and the Theory of Emanative Causation that such beings are supposed to remain as perfectly unified, self-sufficient, and unchanging as any created thing can. That is, although created minds are supposed to act constantly, they are not supposed to change.⁴³

In the *Studies on the universal characteristic*, Leibniz persists in his belief that the activity of minds is one of emanation, but he also expands upon his earlier view and explains exactly what finite minds emanate. Definitions [8], [9], and [14] suggest that minds emanate qualities which are "thought by the intellect" and which are both "requisite" and "sufficient." That is, each mind emanates qualities which can be thought, which (as a collection) are equivalent to what I have been calling a set of instructions, and which, along with the pure activity of mind, constitute (at least) the necessary condition

43. In the second half of 1671 Leibniz worked on a series of definitions that attempt to formulate the relation between the underlying active thing and its changing states. The account of the relation between form and qualities in his notes on Wilkins are the results of this labor. For an earlier version, see VI i 483.

for the states of the corporeal substance. This description of the activities of mind is consistent with the Prearranged Diffusion Relation described in chapter 8, section 3, where the idea is that F emanates instructions for the activity of P. It is also worth noting that each quality plays the same role in the metaphysics of the *Studies on the universal characteristic* that the Idea did in the metaphysics of *On transubstantiation*, except that the quality is much more limited in its causal efficacy than was the Idea. As I argued in chapter 6, section 3, the Idea of a substance S contains the blueprint of S and functions as a conduit of activity between God and the passive corporeal principle. The metaphysical goal of the Idea is first to organize the passive principle into a substantial nature and then to sustain that organization. In the metaphysics of the *Studies on the universal characteristic*, a quality functions in much the same way: it contains an instruction for S and acts as a conduit between the mind and the passive principle. However, its causal goal is much more limited. Its role is merely to instruct the passive principle about how to organize itself so as to constitute a particular substantial state.

Leibniz's two-tiered explanatory hierarchy is a brilliant way to safeguard the immutability of mind while explaining the changes of corporeal substance. It allows mind to remain unchanged while emanating its qualities which function as its thoughts and as the instructions for each state of the corporeal substance. The relation between a created mind and its qualities is like the relation between the Supreme Being and its products: in each case, the emanative source remains immutable while the emanated product changes. In a sense, the qualities of the mind function as a metaphysical buffer zone between the pure activity of the mind or substantial form in a corporeal substance and its passive principle.

But what about definition [9] and the fact that the form is supposed to be the principle of qualities as well as the aggregate of them? For help, let's turn to the Production Rule. As explained in section 2 of the last chapter, for each substantial form F, there is a Production Rule for the continuous production of the discrete states of F. The idea is that if F exists from t_1 to t_n and has a different thought or state at each moment of its existence, then at every moment there will be an instruction about what state to have next. The state occurring at t_1 , together with the Production Rule, will determine the state that F will have at t_2 . That is, the necessary and sufficient conditions for each state of F consists in the conjunction of the principle of activity in F, its Production Rule, and its previous state. The two parts of definition [9] suggest the same basic idea: as the principle or source of its qualities, F will contain both a principle of activity and a Production Rule; but as the subject or bearer of its qualities, F will also contain all the qualities, each one of which has been the requisite sufficient condition for the quality that followed it. Part [9][a] accurately describes the form in that it contains the Production Rule or plan for all its states, but part [9][b] also correctly notes that the form has all its past qualities, each of which has functioned as the requisite sufficient condition for the next state. This interpretation of definition [9] reveals what appears to be the original version of the

doctrine of marks and traces. Consistent with Leibniz's mature doctrine, the form contains in its nature the marks of everything that will happen to it and the traces of everything that has happened to it.

Activity and passivity in the passive principle

But Leibniz was motivated to construct the two-tiered explanatory system for other reasons. In brief, the two-tiered system gave him a way to resolve difficulties concerning the interaction of the active and passive principles in a Prearranged Diffusion Relation. As noted above, if state f of a corporeal substance S does not belong to the union of form F and passive principle P in S , then following the Principle of Causal Self-Sufficiency f will not strictly belong to S . If we suppose that Leibniz intends to construct a Complete-*Ratio* Theory of Corporeal Substance, then it will be necessary for him to construct the nature of S so that it can offer a complete *ratio* for each of its states, whether active or passive. Three difficulties arise at this point concerning the role of the passive principle in the Diffusion Relation between F and P . In order for f to belong to S , the passive principle in S must play some part in the production of f ; that is, it cannot be the case that the dominant mind or form of S is wholly responsible for f . Here the question is: how exactly does the passive principle in S contribute to the substantial nature so as to create the appropriate sort of union with F ? Furthermore, in order for the nature of S to offer a complete *ratio* for all its states, S must contain the complete *ratio* for every passion of S (that is, for every state in which S suffers). Here the question is: how is a wholly active thing like the dominant mind F supposed to contribute to the passion of S ? Finally, the passive principle in S contains substances, say, p_1, p_2, \dots, p_{n+1} , which are supposed to be subordinate to the dominant mind in S and yet, following the Principle of Substantial Self-Sufficiency, are supposed to be self-sufficient. The question here is: how can the subordinate substances in S retain their self-sufficiency and yet be appropriately subordinate?

In order to answer these questions, we need to expand upon our account of the Prearranged Diffusion Relation between the form F and the passive principle P in a corporeal substance S . In my analysis of Leibniz's letter to Johann Friedrich of May 1671, I described the Diffusion Relation as one where the substantial form F diffuses its passive principle P just in case F has constant causal power over P , where P is a collection of subordinate corporeal substances. I argued there that the Diffusion Relation reduces to that of Preestablished Harmony, where F and the substances in P act out a prearranged plan, and I speculated that F emanates instructions for the activity of each of those subordinate substances. By piecing together the clues contained in the *Studies on the universal characteristic*, we can construct a more thorough account of exactly how Prearranged Diffusion is supposed to work. The general idea is that for each state f_i of substance S , there is a quality q_i of F that is the instruction for the subordinate substances in P such that f_i results. Thus, each quality of F is the instruction for the pro-

duction of the state of the corporeal substance. However, in order not to violate the Principle of Substantial Self-Sufficiency, it is crucially important that each of the subordinate substances in P (namely, p_1, p_2, \dots, p_{n+1}) acts out of its own nature and contains its own instructions about how to contribute to that general plan. In other words, although q_i contains the instruction for f_i , f_i will not occur unless all the substances in P (namely, p_1, p_2, \dots, p_{n+1}) act accordingly. Moreover, the same Diffusion Relation must obtain between the dominant mind in, say, p_1 and the substances that constitute its passive principle, and so on, *in infinitum*.

Let's apply this expanded version of the Prearranged Diffusion Relation to our questions. Concerning the causal contribution made by the passive principle to the nature of S , because both the dominant mind or substantial form F and all the substances in P act in the prearranged fashion and therefore contribute to the nature of S , every state f of S strictly belongs to S , and the Principle of Causal Self-Sufficiency is not violated. Concerning the issue of how something wholly active can produce a passion, Leibniz's trick is to leave mind uncontaminated by change: F emanates its qualities or instructions and the subordinate substances act accordingly. A state of suffering results when the substances in P behave in the prearranged manner. Since suffering is equivalent to the loss of perfection, the suffering of P means that the substances of P all lose perfection in the relevant fashion. Concerning how each of the subordinate substances can remain self-sufficient while being subordinate, each acts according to its own nature while simultaneously following the instructions of its F , in a manner consistent with (Strong) Parallelism. When the quality of F demands state f , the substances humbly comply, but they do so by acting according to their own nature, that is, by acting out their own Production Rules. Let's return for a moment to the symphony analogy, where the idea is that the conductor is responsible for the persistence of the music although every single musical state is produced by the musicians. Similarly, the quality and the subordinate substances in S are responsible for every substantial state. Each is a necessary condition for the state, but neither by itself is sufficient. The state will occur if and only if the active and passive principles act as they do.

Leibniz's two-tiered explanatory hierarchy offers a neat way to protect the purity of mind while summoning the contribution of the passive principle. It thereby explains the features of corporeal substance in a manner consistent with the Principle of Causal Self-Sufficiency. In what follows, we will need to say more about what exactly substantial states are and about how the states of the subordinate substances in P contribute to the states of S . Although such questions remain, we are making headway in unpacking the implications of Leibniz's definitions.

Emanation, instantiation, and clarity

One of the central theses of the interpretation offered in this book is that at the center of Leibniz's thought stands the idea that every created thing is a

mind-like substance that both instantiates and emanates the divine essence. We are finally in a position to display Leibniz's first attempt to construct a complete metaphysics around this assumption. Although we will have to reconstruct some of its details, the definitions of the *Studies on the universal characteristic* offer significant clues about how he originally understood this idea.

What are the facts? On the basis of a quick survey of our definitions, we see that minds engage in (at least) three activities: following definition [14], they perceive; following definition [15], they sympathize; and following definitions [8] and [11], they emanate qualities. Moreover, according to definitions [4] and [11]–[13], substances act, suffer, produce, and function as efficient causes. How exactly are these activities related? In order to understand Leibniz's views about the emanations and instantiations of the divine essence, we will have to distinguish among these activities. Some of Leibniz's definitions are either incomplete or in tension with one another. For example, they offer no explicit help with the relation between emanation and sympathy. Definitions [2]–[11] and [16] suggest that the activities of a substance reduce to fluctuations in its perfection which are somehow internally caused; they therefore suggest that each substance is a world to itself. But at the same time, definition [15] implies that every substance is intimately connected to every other. In an attempt to sort these matters out, let's first explain exactly how each created substance is supposed to instantiate and emanate the divine essence. In the next subsection, we will consider perception and sympathy.

There are four points to make concerning the role of emanation and instantiation in the *Studies on the universal characteristic*. First, following Emanative Harmony, the assumption is that each substance is itself an instantiation of the (selected) divine essence. This means that given the Creaturely Inferiority Complex, each creature contains all the divine attributes though in a manner inferior to the Supreme Being. In the discussion of *On endeavor and motion, perceiving and thinking* in section 2 of chapter 8, I speculated that God emanates the same (selected) divine essence to every substantial form, and I proposed that we think of each substantial form as containing the entirety of that (selected) essence much like a mind might contain the entirety of an elaborate narrative. Given Leibniz's panorganism and the fact that a corporeal substance is itself a collection of mind-like substantial forms, it follows that each corporeal substance is a collection of instantiations of the (selected) divine essence. Given our concerns now, the point to emphasize is that each mind-like substantial form is an instantiation of the (selected) divine essence and each corporeal substance is a panorganic collection of such forms.

The second point to emphasize about *Studies on the universal characteristic* concerns the fact that the activities of substances, whether corporeal substances or substantial forms, are also instantiations of the divine essence: when a substance acts through emanation, it emanates its essence (which itself is an instantiation of the divine essence) and thereby produces another

instantiation of that essence. Following the (mid-1671) account of Emanative Harmony, although every substantial form contains the same (selected) divine essence as every other, each also contains a Production Rule according to which the form instantiates that essence in a way different from every other form. According to the interpretation offered in chapter 8, section 2, the Production Rule specifies the exact manner in which the (selected) divine essence will be instantiated and moreover, the results of the instantiation are thoughts of the mind. That is, each of the thoughts or states of F is the result of F's emanating the (selected) divine essence in a manner consistent with its Production Rule. The definitions in *Studies on the universal characteristic* confirm this interpretation and go beyond it. According to definitions [5]–[8] and [11], mind-like forms emanate qualities which are the states or changeables of the form and which have varying degrees of perfection. According to definitions [2] and [4], every state of a substance is either an action or a passion and, moreover, the difference between them reduces to a difference in levels of perfection. For help with this idea, let's return to the analogy of the translations of a story. In the discussion of the Production Rule at the end of section 2, chapter 8, I compared the nature of F to a story selected by an author, its Production Rule to the rules of the language, and the states of F to the sequence of translated sentences that results from applying the rules of the language to the story. In such a case, each sentence in the translated story is a partial instantiation of the selected version of the story. Analogously, the Supreme Being gives every substantial form the same (selected) divine essence and a different Production Rule for how to express or instantiate that essence. The result of F applying its Production Rule to the (selected) divine essence are the states or thoughts of F, each of which is a partial instantiation of the (selected) divine essence. As implied by Leibniz's definitions as well as by the Creaturely Inferiority Complex, each state emanated by F will have a degree of clarity. In section 1 of this chapter, I speculated about how to understand the clarity or obscurity of a state of a substance. What is important for our purposes here is that the emanations of an individual mind-like form are themselves an instantiation of the divine essence with its own level of clarity, and therefore that each state of a substance is a partial instantiation of the divine essence with its own degree of clarity.

The third point to emphasize about the metaphysics implied by Leibniz's definitions is that all the relations among substances reduce to fluctuations in the clarity of these states. This is the new radical point at the heart of *Studies on the universal characteristic*. Definition [16] admits that there are degrees of perfection, while definitions [2] and [4] imply that for any substance S, its features and activities reduce to fluctuations in perfection. In his definitions, Leibniz seems to explain all substantial interaction in these terms. As noted in section 1, the clarity of both substances and states is able to differ radically in degree, so that it is possible for the least clear state of one substance to be clearer than the most clear state of another. For every

state of a substantial form F , that state has an objective degree of perfection or clarity and it has a degree of clarity relative to others in it. Following definition [4], for some substance S_1 , with (general) clarity level C_6 , S_1 will be said to suffer when its level of clarity drops to C_5 , while it will be considered active as long as its level stays roughly at C_6 or C_7 . For another substance S_2 , with (general) clarity level C_{17} , S_2 might be said to suffer when its level drops to C_{16} although it will be thought active as long as it hovers around C_{17} or C_{18} . In the case of these substances, for example, a state of S_1 and a state of S_2 could have the same level of clarity, although the former constitutes suffering in S_1 while the latter is a case of acting in S_2 . Following this analysis, the difference between the acting and suffering of a substance (whether the substance is a substantial form or a corporeal substance) is entirely a question of the degree of perfection of the relevant state compared with previous states of the substance. Given that for a substance S , each state is a more or less clear, partial instantiation of the divine essence, it is easy to reduce the actions and passions of S to fluctuations in the instantiation of the divine essence.

The final point to emphasize here concerns a tension between Leibniz's account of activity and his definition of efficient causation. On the one hand, the definitions imply that the states of substances result from the emanation of mind-like forms and that all activity in the created world is emanative; on the other, the distinction in definition [11] between efficient and emanative causation suggests that besides emanative activity, there might be efficient activity as well. The fact that efficient causation (somehow) involves a change in itself suggests that the acting on the part of an efficient cause is importantly different from that of an emanative one. What are we to think? A careful analysis of the definitions reveals that efficient causation is itself the result of emanative activity. Definitions [2] and [4] maintain that substances have actions or passions and that each of these is a state that is followed by another. Definitions [4] and [11] claim that when a substance S_1 has an action (or passion), it moves from a state f_1 to a state f_2 . When S_1 has an action, the state that results is roughly equal in perfection to the previous state (that is, f_2 has roughly the same amount of perfection as f_1); when it has a passion, the state that results has less perfection than the previous one (that is, f_2 has less perfection than f_1). According to definition [11], efficient causation is such that there is a change in the acting subject and, moreover, there is a passion in the effected object. When substance S_1 is the efficient cause of an effect in substance S_2 , there is a diminishing of perfection in the latter and a change in the former, although not a change in degree of perfection. Although Leibniz's example of efficient causation is that of one moving body striking another, there presumably will be lots of other sorts of efficient causation. For example, when Wanda is hit by the ball, her bruise is the effect and the ball is the cause. In such a case, the perfection of the ball remains constant while the perfection of Wanda diminishes. As this analysis reveals, the activity involved in effi-

cient causation is like all other activities: it is an action or passion on the part of a substance and hence an emanation on the part of a mind-like substantial form.

However, before we can be entirely satisfied with this response, we need to explain exactly how an efficient cause involves “a change in itself.” The answer to our question is to be found in the two-tiered explanatory hierarchy. According to Leibniz, there are two sorts of substances and hence two sorts of subjects, namely, mind-like substantial forms and corporeal substances. It follows from the (mid-1671) Substantial Form Assumption and the Theory of Emanative Causation that the former cannot act as an efficient cause because a mind-like substantial form cannot change. In his notes on Wilkins’ text, Leibniz implies that minds remain immutable although they emanate qualities which are constantly changing. When Leibniz writes that “there is not an [efficient] cause through emanation,” the point is that emanative activity is not itself in the business of changing anything: when a mind emanates, it remains steadfast although its states do not. But the other kind of subject, namely, the corporeal substance, can change and hence can act as an efficient cause. It follows from the Prearranged Diffusion Relation between F and P that the activity of F and of the substances in P is each a necessary condition and all are sufficient for any substantial feature *f* of S. In this case, S is a unified collection of subordinate substances whose states are constantly changing, and therefore each state of S (somehow) consists in the states of the subordinate substances. Since every action of S is the result of this Prearranged Diffusion Relation between F and P, it follows that every action of S will result from a change in itself. In other words, the two-tiered theory of substance is based on a two-tiered hierarchy of subjects, one of whose actions requires immutability, the other of whose actions demands constant change.

The results of this analysis are important. Before offering a summary, let’s return to some questions left unanswered in the previous subsection. Those questions were: what exactly are substantial states and how do the states in the subordinate substances of S contribute to the states of S? We now have a rough answer to the former question, namely, that each substantial state is a partial instantiation of the divine essence. But this answer makes the second question all the more difficult. Let us put it into clearer focus. The Prearranged Diffusion Relation is such that although each of the subordinate substances in P acts out of its own nature, F emanates instructions for the activity of each of those substances. Moreover, according to panorganism, each passive principle is itself constituted of corporeal substances. The result is a hierarchy of diffusion, where F diffuses the subordinate substances in its passive principle P and where each of those substances, say, p_1 , p_2 , . . . p_{n+1} , has its own dominant mind and passive principle, and so on all the way down. We now know that all activity is emanative, so that the Diffusion Relation between F and P somehow consists in the coordinated emanations among minds. There is no genuine causal in-

teraction either between F and P or among the subordinate substances in P. Rather, the idea seems to be that the infinite constituents of a corporeal substance sit calmly emanating the divine essence. Following this analysis, the important question is: how do substantial states result from the Diffusion Relation between F and P?

According to the Theory of Corporeal Substance and the Prearranged Diffusion Relation at its core, each state of a corporeal substance is the result of a Diffusion Relation that holds between F and P: the substantial state f of S is supposed to result from the coordinated contribution of all the states of all the subordinate substances of S. It seems obvious that each substantial state f will somehow be a summation of the emanations of the constituents of S, and also that each of the states of each of the constituents of P, namely, p_1, p_2, \dots, p_{n+1} , will be such a summation. What we now need to explore is how these emanations might be combined. Let's return to our analogy of a symphony for a rough idea of how this is supposed to work. Each musician produces a series of musical states according to the instructions of the conductor, with the result that the orchestra produces a series of musical states, each of which is the summation of the musical states of the individual musicians. Each musical state of the orchestra is the harmonized result of all the musical states of all the musicians. Like the orchestra, each subordinate corporeal substance in S emanates a series of states according to the instructions of F, with the result that the nature of S consists in the summation of the states of its individual components. Although we will need to say more about what a substantial state is, the idea seems to be that it consists in the summation of the states of its constituents. Therefore, each state of S is a coordinated summation of the states of all the subordinate substances in P insofar as they act according to the instructions of F.

In this subsection, we have made good progress in our attempt to explain the activities of substances. According to the metaphysics of the *Studies in the universal characteristic*, all activity is emanative. God emanates the (selected) divine essence to the mind-like substantial forms so that each is like all the others. Because each form contains a different Production Rule than every other, each emanates that essence differently. Forms act constantly through emanation and thereby produce a continuous series of states. Each series is a more or less clear instantiation of the (selected) divine essence, each series is different from every other, and each state in each series is both a thought and a more or less clear partial instantiation of the divine essence. All the relations among substances reduce to corresponding fluctuations in the clarity of the instantiations of the divine essence. On this account, the world becomes a collection of substances that emanate its states and thereby instantiate the essence of God. From the perspective of an infinite being, the world would be very much like the symphony just described: each substance would be busily playing its part in an elaborately harmonized composition.

Perception and unity; sympathy and difference

But as harmonious as this world might seem to the run-of-the-mill infinite listener, the God of the Platonists would not be pleased. It is important to understand the source of the displeasure: according to the account of substantial activities offered earlier, although there are emanations of the divine essence, there appear to be no direct perceptions of them. Given the Platonist assumptions about unity, reflection, and plenitude, such a world would have significantly less harmony and goodness than one in which there was communication and connection. We are now in a position to recognize the critical importance of the other activities of mind, namely, perception and reflection. Each increases significantly the unity and harmony in the world; each contributes importantly to its proper inner workings. Let's consider these other activities.

The genius of Leibniz's proposal about perception in the second half of 1671 is that the same mind-like substantial form is both the subject and the object of its perception. While this position conforms neatly to the denial of causal interaction, what we need to grasp now is how it adds to the unity and harmony in the world. This brings us back to one of the radical points discovered in *On endeavor and motion, perceiving and thinking*, namely, that for each perceiving mind, the world exists as an elaborately constructed appearance whose source is the perceiving mind itself. In the *Studies on the universal characteristic*, Leibniz expands upon this idea. Before the articulation of his new position, let's review the facts. When the substantial form F emanates, it emanates qualities which are themselves the instructions for the activity of the subordinate substances in P although each of the latter acts out of its own nature. By so acting, each of these subordinate substances emanates an instantiation of the divine essence; the coordinated summation of these substantial emanations (somehow) constitutes the substantial state f of S. That is, F emanates quality q, all the subordinate substances in P act accordingly, and state f of corporeal substance S is the result. One of the things we have not been able to explain is exactly what f is and how F is related to it. *On endeavor and motion, perceiving and thinking* offers significant help. As I argued in the discussion of that essay in section 2, chapter 8, Leibniz promulgates for the first time a version of Complete-*Ratio* Phenomenalism. The discussion there focuses on the thinking and perceptions of mind, where the idea is that the perceiving mind produces its own thoughts. When we combine this position with that of the *Studies on the universal characteristic*, it becomes clear that the qualities or states produced by each mind-like form, when it acts according to its Production Rule, are thoughts. What I now want to show is that each substantial state f of a corporeal substance S is a thought that belongs to mind-like F.

Let's turn to the Prearranged Diffusion Relation between F and P for further help with this idea. According to that relation, the activity of F and each of the subordinate substances in P is a necessary condition and together they are sufficient for the substantial state f. It is important that although F and

P do not genuinely causally interact with one another, their activities are in perfect correspondence. The unity between F and P is the result of the Pre-arranged Diffusion between them. We are now in a position to see more precisely how this works: the special correspondence between F and P is just that each state f of S is a thought that F has and that it produces. The relation between F and P consists in the fact that P acts according to the instructions in F and F perceives the result of P's acting. Thus, the unity between F and P consists in the following: F emanates an instruction or quality, say, q_1 ; each of the subordinate substances in P perceives the equivalent of q_1 , which arises from the nature of each; each subordinate substance acts accordingly, which means that each emanates a partial instantiation of the divine essence; in perfect correspondence with this emanative activity on the part of the subordinate substances, F perceives f_1 . Given that what a mind-like form perceives is caused by its own nature, that is, given Complete-*Ratio* Phenomenalism, the relation between F and P depends crucially on (Strong) Parallelism. Let's be perfectly clear about this. When F emanates q_1 and each of the subordinate substances in P perceives it, there is not causal interaction between F and P. Rather, the perception of q_1 on the part of p_1, p_2, \dots, p_{n+1} follows from the Production Rule in each. Similarly, when F perceives f_1 , there is no causal interaction between F and P. Rather, the perception of f_1 follows from the Production Rule in F. There is no genuine causal interaction and yet F and P are intimately related.

By such means, Leibniz explains the features of S while remaining consistent with his most basic Aristotelian assumptions. For example, F and P do not strictly cause one another, and yet they form a perfect union; F is a substance by itself, and yet the (early 1671) Passive Principle Assumption is not violated; F contributes to the activity of S, and yet each subordinate substance in P remains self-sufficient and hence conforms to the Principle of Substantial Self-Sufficiency; and each subordinate substance in P is self-sufficient, and yet the Principle of Causal Self-Sufficiency is not violated. In summary, the unity of a corporeal substance S is grounded in the Pre-arranged Diffusion Relation between F and P, and the Diffusion Relation between F and P consists in the following: F contains the instructions for the activity of all the subordinate substances in P and emanates those instructions; each of the subordinate substances in P acts out of its own nature though entirely consistently with those instructions; F perceives f , which perfectly corresponds to the activity of those subordinate substances. F has the instruction for each state of S, but it also has the perception that corresponds to that state. This is the point of definition [12]: when a mind acts, it brings about a change which means it moves from one state or quality to another; the result of this change is a present actuality that is the effect of this acting. Among other things, it follows that F and P will constitute a substance and a unity just in case the instructions or qualities in F perfectly parallel the activity of the subordinate substances in P and, moreover, the perceptions of F perfectly parallel the activity of P.

It is now time to turn our attention to reflection. Although Leibniz offers

his first explicit account of the relation in his notes on Wilkins, his commitment to the doctrine should not come as a complete surprise. As noted in chapters 5 and 6, the Theory of Emanative Harmony that his teachers bequeathed to him assumed the doctrine. In chapter 6, there was ample evidence of a Reflective Harmony among conscious minds in the writings of 1670. As I suggested in the last chapter, once Leibniz transformed the passive principle in nature into a collection of mind-like substantial forms which are constantly thinking, the step to universal Reflective Harmony was not difficult. Moreover, we found the relation lurking in some texts of 1671. According to Leibniz in *On endeavor and motion, perceiving and thinking*, each mind-like substantial form perceives or thinks harmony, and in that sense perceives the entire world. In the discussion of that essay in section 2 of chapter 8, I postulated that each mind perceives harmony in the sense that each perceives all the instantiations of the (selected) divine essence and that this position is equivalent to Reflective Harmony, where the idea is that each mind reflects all the others and in that sense contains them. In *Studies on the universal characteristic*, Leibniz offers clues about how this is supposed to work.

As noted in section 1, Leibniz's explication of the relation of sympathy in definition [15] goes beyond the traditional version of the doctrine and assumes Reflective Harmony. In the discussion of that definition, a question arose about the expansiveness of the relation of sympathy and reflection: for a substance S, how *far* do its sympathetic and reflective relations extend? In order to answer this question and to recognize the full importance of Leibniz's use of the ancient doctrine, we need to understand more about the similarities and dissimilarities among substances. Before considering Leibniz's position, it would be helpful to remind ourselves of the unity and diversity among the Plotinian Ideas. As noted in section 5, chapter 5, for Plotinus, there is an interrelation among the mind-like Ideas such that each reflects and contains all the others. The difference among the Ideas is that each reflects the others from its own perspective and each offers what might be considered a slightly different entrance into the unity that they all form. By the end of 1671, Leibniz has begun to apply this combination of reflective similarity and reflective difference to creatures. Like the Plotinian Ideas, each mind-like form reflects all the other minds, but does so from its own perspective. In a sense, each substance is a different entrance into the same underlying thing.

Concerning the similarity among substances, each contains the others and is identical to them in two ways. In order to make the point here as clearly as possible, let's remind ourselves of the two kinds of divine instantiation in the world: first, God emanates the (selected) divine essence to every substance so that each creature is most fundamentally an instantiation of the (selected) essence; second, each substance has its own unique Production Rule according to which it emanates the (selected) divine essence and thereby produces its states and thoughts which constitute another instantiation of that essence. It is important to recognize that substances are iden-

tical to one another at both of these levels: not only does each substance contain the same (selected) divine essence, each emanates and perceives the same world. As Leibniz makes the latter point in a passage we have seen from *On endeavor and motion, perceiving and thinking*: “Thinking is nothing other than the perception [sensus] of . . . many things at the same time or the one in the many.”⁴⁴ Like the Plotinian mind-like Ideas, each Leibnizian mind thinks all the others and, in that sense, thinks the same thing as all the others.

Concerning the dissimilarity among minds, each mind offers a different perspective on the same underlying thing. That is, like the Plotinian mind-like Ideas, each substance offers a different perspective or approach to the same underlying harmony. For help with this idea, let’s return to our analogy of the translations of a story. Most relevant here is the fact that each translated version of the story is a translation of exactly the same series of propositions, but each differs from every other in the way in which it instantiates or expresses those propositions. Analogously, each substance emanates the same (selected) divine essence, but does so in a manner different from every other. This brings us to an important point entailed by (mid-1671) Emanative Harmony, namely, that the fundamental difference between a substance R and a substance Q is that each has a Production Rule according to which it instantiates the (selected) divine essence in a way that is different from every other substance. This also helps us to grasp the sense in which each substance, by thinking or reflecting the others, can be said to contain them. When a substance R perceives or thinks Q, it perceives or thinks the version of the (selected) divine essence that Q emanates. Since what mind-like substances emanate are states that can be thought, it follows that when R perceives Q, R thinks Q’s states. In short, since the difference between R and Q consists in the different means by which they emanate the divine essence and since what they emanate are states which can be thought, it follows that when R perceives or thinks Q, it thinks the thoughts of Q and hence contains Q.

With this said, we can better understand Leibniz’s account of Reflective Harmony in the *Studies on the universal characteristic*. According to definition [15], sympathy is when “through the insensible acting or suffering of one thing, the other thing acts or suffers. That is, it is a change of the one in relation to the state of the other, in an insensible way.” According to the interpretation of substantial states offered here, each state is a partial instantiation of the (selected) divine essence and is something that can be thought. Once we assume that every mind-like substance both emanates the (selected) divine essence and perceives the world, it follows that every mind will perceive or think the states of every other. Since every action or passion of a substance is such a state, it follows that every substance will contain every other. It is not surprising that Leibniz adds in the margin that sympathy is “an insensible communication.”

44. VI ii 282.

Let's review. According to the definitions in Leibniz's *Studies on the universal characteristic*, all substantial states reduce to fluctuations in the clarity of the instantiation of the (selected) divine essence, and all substantial interaction is explained in such terms. The created world consists in an infinity of mind-like substantial forms which continually produce their states. Every substance contains the same (selected) divine essence and each contains a Production Rule which directs the mind about how to instantiate that essence. We now know that each mind contains all the others in the sense that each thinks all the states of all the others. By such means, we arrive at the full-blooded Platonist doctrine of Reflective Harmony. Every substance perceives or thinks every other; each contains the whole created world.

A question arises at this point about the precise difference among minds. There seems to be a tension in Leibniz's position. It can be expressed in two ways. On the one hand, every mind-like substantial form is a continuous series of partial instantiations of the (selected) divine essence; on the other hand, every substance is supposed to instantiate that essence differently from every other. On the one hand, each mind thinks all the others and, therefore, like them, perceives harmony; on the other hand, each is supposed to approach harmony from a slightly different perspective. In short, given that every substance instantiates the same thing (namely, the (selected) divine essence) and given that every substance perceives the same thing (namely, harmony) it is reasonable to ask for a fuller account of their difference. That each is supposed to be different from the others is clear, but it remains unclear exactly how to explain that difference.

Definitions [9] and [10] suggest that the difference among substances is set from the beginning: first, the Supreme Being "distinctly" thinks an essence and then it instantiates the essence in an active form. That is, first the Supreme Being thinks "the aggregate of requisite predicates," which is equivalent to a fully articulated individual essence or complete concept, and then it creates the form or "the principle of qualities," which is the Production Rule. Leibniz's definitions suggest that there are three closely related ways in which each substance differs from every other: although each mind is similar to every other as an immutable and active thing, each is different in what it emanates, in what it perceives, and with what it is unified. How are these differences related? How are they to be explained?

These questions bring us to the importance of the principle of passivity in Leibniz's thought. Throughout his long philosophical career, he insists that the active principles in nature are rooted in passivity. We are now in a position to explain one of the motivations behind this persistent claim. It follows from the conjunction of definitions [2] and [3] that every created substance participates in passivity. According to the (early 1671) Passive Principle Assumption, a substantial form *F* is permanently attached to a passive principle *P* whose identity is determined by the dominant minds of the subordinate substances in *P* so that the core of substance that results from this relation between *F* and *P* is such that *F* will only act outside itself through those minds. Despite the lack of genuine causal interaction between

F and P, it remains true that for every substantial form F, F's perspective on the world is intimately tied to P. The crux of the matter is that for each divine-like mind, its passive principle determines the level of clarity of its perception and hence of its instantiation of the divine essence. Our expanded account of the Prearranged Diffusion Relation helps to explain this point. Given that all the activities of mind-like forms reduce to fluctuations in the clarity of the instantiation of the divine essence and given that the relation between F and P is one of perfect correspondence, what F perceives is thoroughly coordinated with the activities of P. Once we assume that every mind perceives the same thing, namely, harmony, and that the difference among minds is due to their perspective on that harmony, it is relatively easy to explain how F's perspective on the world is due to its relation to P: the obscurity or clarity with which F perceives the world is precisely matched by the obscurity or clarity with which P instantiates the divine essence. If P instantiates the divine essence obscurely, then F perceives the world accordingly. For help with this idea, let's turn to our analogy of the musical score, conductor, and orchestra. Imagine a number of entirely separate orchestras, each with its own conductor conducting the same score. Further suppose that although the conductors have the same amount of talent and experience, the musicians differ greatly in ability: orchestra A contains qualified musicians, orchestra B mediocre ones, and orchestra C totally incompetent beginners. In this case, it is possible for orchestra A to produce beautiful music while C results in cacophony. Despite the similarity among scores and the equality of talent among conductors, the conductor of A will hear something significantly different from what the conductors of B and C experience. Analogously, each mind-like substantial form contains the same (selected) divine essence and each is equally divine-like, but the perceptions of each will differ radically, where the difference is in direct correspondence to the passive principle of each. Mind A will perceive or think harmony clearly while mind C does so obscurely, where the difference between the perceptions of A and C is intimately tied to the clarity or obscurity of its passive principle. However, it is important to note the disanalogy between the orchestra and the substance. In a way that does not apply to the orchestral case, the clarity level of F and P are perfectly coordinated. That is, while the clarity of F is closely tied to P, the clarity of P is similarly tied to F. The Prearranged Diffusion Relation between F and P requires that F and P be uniquely suited for one another. The level of clarity or obscurity of F matches P perfectly.

By such means, we arrive at the fundamental difference between the unity involved in Reflective Harmony and the unity of substances. According to the definitions in the *Studies on the universal characteristic*, every substance has the same relation of Reflective Harmony with every other: each mind-like substantial form reflects and hence contains all the others. It follows from this full-blooded Reflective Harmony that every creature is intimately related with every other. However, the relation between the active and passive principles in a corporeal substance is intimate in a different way, and

produces a different sort of unity. Although all the substances in God's world are perfectly prearranged to correspond to one another, the active and passive principles in every corporeal substance are prearranged to correspond to one another in a more direct fashion. For help with this topic, let's turn to the (mid-1671) Substantial Form Assumption. Particularly relevant here is the idea that a substantial form F of a substance S contains a Production Rule that is such that the necessary and sufficient conditions for each state of F consists in the conjunction of the principle of activity in F , its Production Rule, and its previous state. I propose that the correct functioning of the Production Rule in S depends on the fact that the states of F are related to the states of P in a way different from the states of all the other substances in the world. To be precise, F is constructed so that each of the perceptions that it has of P is a necessary condition for its next state. The perceptions that it has of the rest of the world do not function in this way. That is, the proper functioning of F 's Production Rule does not rely on the states of any substances other than those in F 's passive principle, but the proper function of the Production Rule does rely entirely on the states of $p_1, p_2, \dots p_{n+1}$. We find the same basic idea, approached from slightly different directions, in the Theory of Corporeal Substance and the (early-1671) Passive Principle Assumption. The Prearranged Diffusion Relation, which stands at the center of the former, entails our point. It claims that the activity of each of the subordinate substances in P is a necessary condition of any substantial feature f of S .⁴⁵ Following the interpretation of this relation offered at the beginning of this subsection, f_1 is what F perceives just in case it emanates quality q_1 ; and each activity of each of the subordinate substances, $p_1, p_2, \dots p_{n+1}$ is a state of $p_1, p_2, \dots p_{n+1}$ that corresponds to f_1 . It follows that each state of each of the subordinate substances in P is a necessary condition for the thinking of f_1 by F . Nor is that all. The (early 1671) Passive Principle Assumption also implies that F is tied to the dominant minds of $p_1, p_2, \dots p_{n+1}$ and hence to its perception of them in a way that it is not connected to any other substances. In brief, every mind-like substantial form F and all the dominant minds in the subordinate substances in P perceive and hence contain all the states of all the substances in the world; but F and each of the minds in $p_1, p_2, \dots p_{n+1}$ bears a special relation to one another: for each, the perception of the states of the others is a necessary condition for the proper functioning of its Production Rule.

Unity, diversity, and Preestablished Harmony

There is a lovely elegance to this system, which handsomely combines the demands of the Platonist assumptions about unity and diversity with the insistence of the Aristotelian assumptions about causal self-sufficiency. Each substance contains the same (selected) divine essence, but instantiates

45. For an account of how P can be a necessary condition of F , see the discussion in ch. 8, subsection 'Resurrection, core of substance, and Prearranged Diffusion.'

that essence in its own unique fashion. Because each substance is different from every other, it will instantiate a different version of the divine essence; because each substance perceives what it emanates or instantiates, it will perceive a different version of the world. Therefore, each substance is entirely causally autonomous and thoroughly intelligible in that each contains the complete *ratio* for everything it does and everything it thinks. But each is also intimately connected to every other. Because all substances perceive the same harmony – that is, because they perceive the Supreme Being insofar as it is immanent in the world – each contains all the others. But each differs from every other in its perspective on harmony. In section 2 of chapter 8, I noted the remarkable idea that according to Leibniz in the *Elements of natural law*, the “deformity” of mind is a good-making feature. It now seems that such deformity is rooted in passivity in the sense that the clarity of the perceptions of each mind-like form is a function of the clarity of the instantiation of the (selected) divine essence of its passive principle. Although each substance is intimately related to every other, the constituents of a corporeal substance are constructed so that the perception of the activities of each functions as the necessary conditions for the activities of all the others.

One of the most striking features of the *Studies on the universal characteristic* is its successful attempt to explain substantial activity entirely in terms of degrees of perfection. There are two important results. The reduction of substantial activity to emanations of the (selected) divine essence gives Leibniz the means to sever the causal connections among substances. Each creature sits autonomously producing its own world: the activities and perceptions of each are nothing more than an instantiation of the (selected) divine essence, which follows from the Production Rule given it by God. But this total autonomy is neatly coupled with a perfect unity among all creatures. Every action and passion of every substance is reflected in every other. Each contains and responds to the fluctuations in the levels of perfection of all the others. This account of substantial activity has several advantages. Among other things, it is an elegant way to increase the variety in the world. One of the claims of the Theory of Harmonized Plenitude is that the goodness of the world is partly a function of the variety of creatures within it. By making difference a matter of the clarity of the instantiation of the divine essence, Leibniz has added significantly to the variety of goodness in the world. The result is an elaborate hierarchy of perfection.

This brings us to a dramatic break that Leibniz makes with some of his Platonist predecessors. According to the Supreme Being Assumption, each of the features of self-sufficiency, perfection, reality, and unity is a function of the other. According to Leibniz in the *Studies on the universal characteristic*, there is a hierarchy of perfection, but there is neither a hierarchy of unity nor self-sufficiency. As noted in the analysis of definition [17] in section 1, there are two kinds of unities that conform to the two kinds of substances: whereas the mind-like substantial forms cannot be divided in any way, the corporeal substances in the world have constituents and are divisible. In this case, there is not a hierarchy of degrees of unity, but there are two different

kinds of unity. According to the definitions in the *Studies on the universal characteristic*, each substance seems to be self-sufficient in exactly the same way: each has a nature that contains the complete *ratio* for all its features. But it seems reasonable to assume that the same sort of division between kinds of unity would apply to the feature of self-sufficiency as well. That is, the self-sufficiency of mind-like forms differs from that of corporeal substances since the latter depends on the former. The important point for us here, however, is that the metaphysics of the *Studies on the universal characteristic* lacks a hierarchy of degrees of unity and self-sufficiency. By the end of 1671, Leibniz has transformed the Platonist hierarchy so that the difference among the levels of being reduces to one of perfection. He has constructed an elaborately harmonized world within which there are unities within unities, all the way down. Each corporeal substance both contains a unity and is itself a component of one. Preestablished Harmony consists of an infinity of causally autonomous beings in perfect communication with one another. The only thing more causally autonomous and more unified than the world itself is its perfectly self-sufficient and wholly unified creator.

For the sake of convenience, let's summarize those assumptions whose details need revising on the basis of Leibniz's *Studies on the universal characteristic*:

- (Early 1672) *Reflective Harmony* claims that every substance thinks or reflects the entire world and contains every other substance in the sense that it perceives all the states or thoughts of all the others.
- The (early 1672) *Substantial Form Assumption* claims that for every mind-like substantial form F in a corporeal substance S, F acts constantly through emanation and therefore can neither be created nor destroyed by anything other than God; F contains the (selected) divine essence and a Production Rule where the latter specifies how F will emanate the former; F emanates its states which are its thoughts, which change constantly, which are the ontological correlates of the predicates in the complete concept of S, and which are a more or less clear instantiation of the (selected) divine essence; F is permanently rooted in its passive principle P with which it forms a core of substance, where the relation between F and P is one of Prearranged Diffusion and where the unity is indissoluble.
- The (early 1672) *Theory of Corporeal Substance* maintains that, for each corporeal substance S, whether human or non-human, the nature of S is constituted of a mind-like substantial form F and a passive principle P, where F and P have a Prearranged Diffusion Relation with one another. For the nature of F, see the (early 1672) Substantial Form Assumption; for the nature of P, see the (early 1671) Passive Principle Assumption.
- The (early 1672) *Prearranged Diffusion Relation* between F and P in a substance S creates a core of substance which is constituted by F and the dominant minds in P and which can be more or less expansive (for details, see chapter 8, section 3). The Diffusion Relation is such that, although each

of the subordinate substances in P acts out of its own nature, F emanates instructions for the activity of each of those substances and each of those substances perceives those instructions: the activity of F and of the substances in P is each a necessary condition and all are sufficient for any substantial feature *f* of S; and moreover, *f* is a perception or state whose source is F. The Diffusion Relation assumes Complete-*Ratio* Phenomenalism, the Complete-*Ratio* Theory of Substance, and (Strong) Parallelism.

3. Method and metaphysics, 1670–1672

For decades, scholars have argued that Leibniz's primary goal in the period 1670–72 is to construct the details of his first physics. For years, they have disagreed about whether the pre-Paris years contain any coherent metaphysics at all. Recently, when commentators have attempted to reevaluate the early work, they have been content to focus on a few related texts.⁴⁶ In this and the last two chapters, I have attempted to show that once we place the entire range of Leibniz's writings of 1670–72 in their proper historical and philosophical context, a fascinating and consistent developmental story emerges. This story shows that Leibniz's elaborate metaphysics is an attempt to combine ideas from the major philosophical traditions as a way of solving the metaphysical, physical, and theological problems that interested him. In chapter 8, I amassed a good deal of circumstantial evidence that by the autumn of 1671 Leibniz had developed all the sub-theses of Preestablished Harmony. Because much of that textual evidence was both obscure and incomplete, I had to stitch together my interpretative account. Although the definitions in *Studies on the universal characteristic* are also obscure, when we combine them with the evidence of chapter 8, I do not think we can avoid the surprising conclusion that by the autumn of 1671, a full fifteen years before the *Discourse on metaphysics* and eighteen years before the *First truths*, Leibniz promulgates a version of Preestablished Harmony. There is no smoking gun here, but the texts suggest that when Leibniz went to Paris in March 1672, his favorite metaphysical option was the collection of claims constituting Preestablished Harmony.

I have argued throughout this book that the young Leibniz intends to weave a seamless garment out of borrowed threads. I offer as further support of this claim that the metaphysics promulgated in *Studies on the universal characteristic* is itself a culmination of Leibniz's earlier philosophical commitments. That is, we should see the metaphysics proffered by Leibniz in the period 1671–early 1672 as the result of his attempt to build a coherent system out of his Metaphysics of Substance and Metaphysics of Divinity.

46. For example, in his helpful book on Leibniz's early philosophy, Beeley does not consider most of the texts that I discuss in this and the last chapter because they seemed to him to constitute "the innumerable drafts" of ideas that Leibniz did not take seriously but only considered "in the workshop of ideas." See "A Response," 74.

Among the texts of the period, we find scattered clues of how the Aristotelian and Platonist assumptions underlying the *Metaphysics of Substance and Divinity* encouraged Leibniz in the evolution of his thought. Concerning his commitment to Aristotelianism, Leibniz applauds the elegance of Aristotle's "integrated system," and throughout 1671 acknowledges his debt to Aristotelian ideas.⁴⁷ Concerning his commitment to Platonism, Leibniz is sometimes even more explicit. For example, in some of the notes that he sent to Johann Friedrich in May 1671, he describes a part of his philosophical evolution. In the essay, *Concerning the use and necessity of demonstrations of the immortality of the soul*, Leibniz explains that he has developed a system that will provide answers to the most profound questions. At the center of his philosophy, says Leibniz, stands a divine-like mind that can accommodate all essences. Although he does not explain what these essences are, he suggests that his views about mind are Platonist in origin. According to his own account, he took this obscure and "inflated Platonism," clarified it, and then used it to explain (among other things) "by what *ratio*" mind "is effected by the body, or [seu] perceives, [and] by what *ratio* on the other hand, it acts on the body." At the basis of his answers to these and other questions stand "the Elements of Mind." These elements "are small in mass [mole], but great in worth, since they contain the first principles of affections, virtues, the Republic, happiness, Jurisprudence, and natural Theology." Besides solving problems in theology and law, Leibniz insists that these elements "offer an Hypothesis by which all phenomena and mysteries of faith are able to be preserved." He proclaims in a text part of which we have seen, "Neither will what Existence is be able to be defined, nor will it be possible to explain how Existence corresponds to anything unless a Mind is supposed. Oh, our abused philosophy! . . . But what Existence is, what has to be superadded to Essence, no one up until now has defined."⁴⁸ It is among the definitions in *Studies on the universal characteristic* that we find a clear account of essence, existence, and their precise relation to mind. In short, when we stand back from the texts of the period 1671–early 1672 and survey their elaborate and difficult details, we can witness Leibniz edging toward the basic doctrines of his mature philosophy by way of his *Metaphysics of Substance and Divinity*.

Before turning in chapter 10 to the final phase in the evolution of those doctrines and their surrounding metaphysics, let's briefly consider one obvious question: if Leibniz has developed such a significant metaphysical position by the end of 1671, why doesn't he explicitly announce it? I addressed a version of this question in chapter 1 where I suggested that Leibniz thought it unwise to preach to his interlocutors and hoped instead to lead his reader to the truth by slow but steady steps. Is there evidence of his *Metaphysics of Method and Rhetoric of Attraction* in the texts of the period 1671–early 1672?

47. See, e.g., VI ii 301–02, 395. 48. II i 113–14.

Throughout the period, Leibniz proclaims his commitment to conciliatory eclecticism, and energetically attempts to enlist other philosophers in its service. In his letters of 1671, some of which we have discussed in chapters 4, 7, and 8, Leibniz calls attention to the success of his conciliatory method, although he never explicitly presents the details of his system. To a Dutch doctor and defender of Copernicus, Lambert van Velthuysen, he insists in May that “the ancient and new experiments agree” and that “the greater part of hypotheses [of ancient and new philosophers] are able to be reconciled.”⁴⁹ In his November letter to Arnauld, he implies that his success in solving the problem of the Eucharist was helped by his conciliatory means. In other texts, he compares his physical views to those of Aristotle, Descartes, Digby, Hobbes, Galileo, and Thomasius.⁵⁰ To the German Aristotelian, Hermann Conring, Leibniz proclaims the virtues of the modern philosophers and insists that his own views are consistent with the philosophy of Aristotle, Plato, Hobbes, Digby, Descartes, and others.⁵¹ Leibniz seems especially keen to enlist Conring in his methodological project. During their correspondence, Conring endorses a conciliatory approach and proposes “to steer a middle path between the ancient and new philosophers.” In a letter to Leibniz of February 1671 Conring recognizes the importance of Leibniz’s contribution:

I myself agree with you that because of recent experiments certain things can be taught or done more happily than we are accustomed in the field of medicine. But if you were well-versed in the books of the ancient doctors, you would realize how many things known to the ancients are not known today. Yet there is error in both ways: the moderns know and admire only the new, they haughtily disdain anything old, betraying their own ignorance to the learned; others, incurious of recent matters, embrace only the ancient. I agree with neither, but it is my desire to combine the old and the new. Our age is most greedy for the new alone, and is ignorant of the ancient, with both insolent arrogance of others and stupid self-love. But what grieves me most is that however much knowledge increases on one side, an equal amount is diminished from the other. I do not doubt however that you will tread each path with profit and an increase of learning.⁵²

But at the same time that Leibniz was inspiring philosophers with his *Metaphysics of Method*, he was also cleverly engaged in his *Rhetoric of Attraction*. Throughout the texts of 1671, we find ample evidence of his caution. His introductory letter to Arnauld, for example, reads like an elaborate coded message: instead of articulating his underlying metaphysics, Leibniz merely drops clues as to its nature and makes enticing promises of its enormous benefits. Even in his letters to Thomasius, he notes the similarity of the views of his mentor to those of the moderns.⁵³ In some notes on prime matter, he compares his views to those of Aristotle and Descartes.⁵⁴ That is, consistent with the *Rhetoric of Attraction*, Leibniz seems to have

49. II i 98. On Van Velthuysen, see the Academy editors’ introduction, xxi.

50. II i 93–94, 96; VI ii 395. 51. II i 79. 52. II i 87.

53. E.g., see II i 96. 54. VI ii 279.

no intention of divulging the underlying assumptions of his system. For example, after summarizing the general features of his metaphysics, he warns Wedderkopf⁵⁵ in May: “But this is said to you; I should not like to have it get abroad. For not even the most accurate remarks are understood by everyone.” In one of his essays for Johann Friedrich, Leibniz goes even farther. After presenting a general account of the development of his views and their importance, Leibniz announces that he has the basic elements of his ideas entirely “prefigured, connected, and expressed” in his mind. While he admits that he has not had the time to present these views in detail, he insists that such matters deserve “perseverance of attention” and not “a hasty lecture.” In an unusually frank moment, in an essay entitled *Concerning the use and necessity of demonstrations of the immortality of the soul*, Leibniz explains:

The idea is not to present these demonstrations so that entering [people’s] ears with a favorable speech, they strike with a sort of temporary rapture, but the idea is to have them enter minds and remain there for good, and to be considered in acting. It is like the demonstrations of the Geometry of Euclid, which ought not to be quickly looked at, but rather examined and explained up to their first elements, until they are clear and can be denied by no one. These things are so important to life and happiness that they do not deserve to be torn from their own defenses by which they defend themselves mutually as an armour of perpetual connections; they do not deserve to be born and exposed to the laughter or the neglect of those who still do not grasp the whole *ratio* of the system.⁵⁶

In 1671, Leibniz was naive enough to think that he had arrived at the first elements of the true philosophy and that those elements were potentially the source of happiness and peace. But he was also realistic enough to believe that their persuasive power crucially depended on their proper presentation. For the student of Leibniz, this combination of naivete and realism is disastrous. Instead of exposing his system to laughter, Leibniz chose to insinuate it bit by bit. His tragic mistake was assuming that these piecemeal presentations of his thought would be sufficient to lead his readers to his “first elements” and eventually to the *ratio* behind his system. The goal of chapters 6 through 9 has been to piece together the clues which he left in the texts of 1670–72 in an attempt finally to discern that system. In giving this “history of his discoveries,” we have been following Leibniz’s own recommendation. As he wrote to Louis Bourguet in 1714: “it is good to study the discoveries of others in such a way that allows us to detect the source of their inventions.” According to Leibniz, we will “better profit” from the proposals of other thinkers when we identify “the process by which they arrive at” their ideas.⁵⁷ It is now time to turn to the final chapter in our account of Leibniz’s metaphysical “discoveries.”

55. II i 118: L 147.

56. II i 114.

57. G III 568. A longer version of this text was quoted in the Introduction. See n. 35.

Final steps toward the mature philosophy, 1672–79

When Leibniz went to Paris in 1672, he was on a secret diplomatic mission for the Baron Johann Christian von Boineburg of Mainz. Leibniz and his employer sought to maintain peace in Europe despite the aggressive intentions of Louis XIV. When Leibniz reached Paris in March 1672, England had already declared war on Holland; France would do so within the week. By the time Leibniz had settled in the French capital, political peace in Europe was no longer attainable. But the young man remained in Paris to pursue philosophical peace instead, and as a means to that goal, to educate himself as thoroughly as possible. It is striking that in 1676, after a period of enormous productivity, he struggled to stay in Paris, arguing that his pursuit of science in the service of humanity could be better achieved there than in the court of Hanover, whose duke had recently employed him.¹

During the four years Leibniz spent in France, his intellectual energies were focused primarily on mathematical and technical problems. The results include the construction of a calculating machine that was successfully demonstrated in early 1675 and the invention of the calculus in the autumn of that year. However, despite his overriding concern with such projects, Leibniz did not neglect the metaphysical system that he worked so hard to develop during the period 1668–early 1672. He found time to reexamine his ideas and to enlarge upon key elements of his system.² For the sake of convenience, let's call the metaphysics that Leibniz either developed or confirmed between early 1671 and early 1672 his *core metaphysics*. I take it that this system contains (at least) the doctrines articulated in chapters 6 through 9. But it is important to be perfectly clear about the exact relationship between these doctrines and his more basic underlying assumptions. The methodological, Aristotelian, and Platonist assumptions articulated in chapters 1, 2, and 5 constitute the materials out of which Leibniz developed his Metaphysics of Method, Substance, and Divinity. These assumptions form the bedrock of Leibniz's thought for the rest of his very long life. Between 1668 and 1672, his core metaphysics evolved out of the application of these assumptions to the grand theological, physical, and metaphysical problems that interested him. This metaphysics consists of (at least) the fol-

1. Aiton, *Leibniz: A Biography*, 60.

2. Leibniz arrived in Paris in March 1672 and left in October 1676. Between early 1673 and late 1675, he applied most of his energies to mathematics; nearly all of his philosophical work falls on either side of this period.

lowing doctrines: (mid-1671) Emanative Harmony, (early 1672) Reflective Harmony, the (mid-1671) Passive Principle Assumption, the (early 1672) Substantial Form Assumption, and the (early 1672) Theory of Corporeal Substance along with its related Prearranged Diffusion Relation and Production Rule; moreover, these doctrines entail Complete-*Ratio* Phenomenalism, (Strong) Parallelism, and the Complete-*Ratio* Theory of Substance.³

During his Paris period, Leibniz remains committed to all these tenets, although he expands upon some of them.⁴ As I will show here, when he leaves the French capital in the autumn of 1676, he has either reconfirmed or refined all the doctrines contained in his core metaphysics. As we will see, his doctrine of marks and traces and the Principle of the Identity of Indiscernibles are more securely in place; his Complete-*Ratio* Phenomenalism, (Strong) Parallelism, and Complete-*Ratio* Theory of Substance are more fully articulated; and he is prepared to distinguish between complete and incomplete beings. Upon leaving Paris, the only one of his prominent mature doctrines that has not yet evolved is his account of truth. Because this theory did not develop until 1679, the discussion in this chapter will cover the period between Leibniz's arrival in Paris in March 1672 and the development of the concept containment account of truth in 1679.

There are three main stages in the evolution of Leibniz's ideas during our period. His interest in mathematical problems surrounding the calculus reached a highpoint in 1674–75. During that period he produced only a few essays of metaphysical importance. Almost all of the writings that interest me here fall neatly on either side of that divide. In section 1, I survey the early Paris writings and uncover ample evidence of the core metaphysics. Although Leibniz works energetically in the areas of physics and theology in 1672–74, the core metaphysics does not evolve in any significant way. In sections 2 and 3, I turn to the difficult and enormously rich philosophical writings of 1676 where Leibniz makes important advances in the details of his views. However, as I show, these fall neatly within the confines of the core metaphysics. In section 4, I turn briefly to some of the motivations behind the development of Leibniz's concept containment theory of truth. It is important to recognize that the theory is a relatively direct descendant of the Metaphysics of Substance and Divinity. Finally, in section 5, I consider some questions that arise for my interpretation. For example, there has recently been a good deal of speculation about the degree to which Leibniz

3. For a summary of these, see the Appendix II, chs. 8–9. In the discussion that follows, I will drop the dates from my references to these doctrines, but it should be understood that I mean the last revised version of the doctrine.
4. None of the relatively few studies of the Paris years has recognized its importance. For the most helpful recent work, see Wilson, *Leibniz's Metaphysics*, ch. 2; Fouke, "Leibniz's Opposition to Cartesian Bodies during the Paris Period, 1672–76;" G.H.R. Parkinson, *De Summa Rerum: Metaphysical Papers, 1675–76*, Introduction; Mark Kulstad, "Causation and Pre-established Harmony in the Early Development of Leibniz's Philosophy;" Robinet, *Architectonique disjonctive*, passim; Belaval, *Leibniz*, chs. 4–5; Hans Poser, "Leibniz' Parisaufenthalt." Wilson, Poser, and Kulstad include references to the preceding literature.

was influenced by the metaphysics of Spinoza's *Ethics*. The developmental story offered in the previous chapters shows that however much Leibniz was shocked and enthralled by Spinoza's metaphysical proposals, they could not have had any serious influence on the development of his thought.

I have claimed that when Leibniz arrived in Paris in March 1672, he carried with him the set of metaphysical doctrines attributed to him in the previous chapters. Before turning to the further evolution of some of these views, it will be helpful to say something about the status that these doctrines had in Leibniz's thought at that time. On the basis of a thorough analysis of the texts of 1672–79, there can be little doubt that Leibniz maintained his commitment to the Complete-*Ratio* Theory of Substance, Complete-*Ratio* Phenomenalism, (Strong) Parallelism, and the other major tenets articulated above. As I show in this chapter, we find evidence for these claims throughout our period; as I claim in the Conclusion to this book, they form the bedrock of Leibniz's mature thought. But I want to make it perfectly clear that during the 1670s, Leibniz was in the process of testing and reevaluating these commitments. Between 1672 and 1679, Leibniz met and corresponded with many of the leading intellectuals in Europe. This must have been a thrilling and sometimes disturbing period. That Leibniz first applied himself fully to mathematics in 1672 and had developed the calculus four years later attests to his enormous intellectual energies at the time. In these years of intellectual growth, it should not be surprising that his personal notes are sometimes vague and convoluted. That Leibniz was trying out ideas and testing his theories is clear. As the cautious thinker he was, he would of course work and rework his ideas. But we must not let the difficulty of these texts mislead us. Throughout these years, sometimes with greater clarity, sometimes with less, the core metaphysics is consistently discernible.

There is ample textual evidence that although he remained undecided about a few of the details of his system, he did not waver from the metaphysical commitments that he brought with him to Paris. It is important to understand, however, the exact nature of his commitment. While Leibniz took the tenets that constitute the core metaphysics to be true, there is reason to believe that he was *prepared* to be convinced otherwise. That is, if his doctrines had failed to solve the new problems that he confronted, or if his old solutions had come to seem unsatisfactory, he would have changed his views. Previous chapters of this study offer significant examples of Leibniz's willingness to revise his views dramatically as soon as he became convinced of a good reason to do so. Once we see Leibniz's writings of 1672–79 within the context of the developmental story presented here, it becomes possible to glimpse his profound intellectual honesty. Leibniz was neither prepared to produce a grand account of his ideas nor willing to proclaim the truth of his system because he had not yet submitted them to the full battery of tough philosophical tests. When other scholars have examined the Paris texts in general and Leibniz's personal notes in particular, they have seen indecisiveness and confusion. I suggest that these texts reveal the op-

posite. In the midst of his intensive work in mathematics, Leibniz's main philosophical goal was to see if the doctrines developed in 1668–72 would survive such careful dissection and thorough reexamination. Especially in his personal notes, which Leibniz wrote for himself and never intended to publish, he applies his metaphysical tenets to a wide variety of problems, some of which are old and many of which are new. For example, he confronts for the first time both the difficulties of skepticism and the dangers of Spinozism. In his notes, we discern a mind eager to reformulate familiar proposals and test ideas. In the end, Leibniz remained devoted to his doctrines because they continued to offer the most plausible solutions to the sundry problems that concerned him. Let's now consider the texts.

1. Early Paris years, 1672–73

I have suggested that during his stay in the French capital, Leibniz submitted his core metaphysics to a grueling series of philosophical tests. If I am correct in my interpretation of Leibniz's philosophical development and in my account of his interests in Paris, then we would expect him to turn his attentions to some of the grand philosophical problems for which he had not yet developed adequate solutions. Chapter 8 contained a brief account of Leibniz's concern with the problem of the continuum, while chapter 6 noted his early interest in the problem of evil and the closely related difficulty of divine freedom. It is well-known that the mature Leibniz considers these problems to be labyrinths from which it is difficult for human reason to escape. It should not come as a surprise, therefore, to discover that it was exactly these problems to which Leibniz turned his philosophical energies in 1672.

The main thesis of this section is that during his first months in Paris, Leibniz maintained the metaphysical status quo. The details of his system did not develop significantly, but they were put to use in solving the problems that most interested him. In March 1673, Leibniz wrote a letter to Johann Friedrich in which he describes his intellectual activities during his first year in Paris: "I have made important demonstrations in the difficult areas of religion and the true philosophy," and have also made contributions concerning "the inner nature of things."⁵ That God stands at the center of this "true philosophy" and that the evolution in Leibniz's thinking about mind and matter during the period is encouraged by his reflections on the nature of God is clear from his notes. Leibniz arrived in Paris with the basic outline of both his *Metaphysics of Substance* and his *Metaphysics of Divinity*; the next step in his metaphysical investigations was to examine more precisely the relation between these two aspects of his thought.

5. II i 232.

The *Philosopher's confession*

It was during the winter of 1672–73 that Leibniz wrote what is probably the best known of his Paris writings, the *Philosopher's confession*. In this dialogue, he discusses for the first time at length a problem that would engage his attention for the next forty years. In 1668–69, when he wrote the *Conspectus* for his grand *Catholic demonstrations*, he lists a number of topics that he intends to discuss, including the relation between God and evil.⁶ We can only guess at his reasons for taking up this topic in the winter of 1672–73, but it is at least possible that he was motivated to do so because he had developed a clear conception of his Metaphysics of Divinity just before departing for Paris, and in the autumn of 1672 was settled enough in the French capital to take up such a difficult project.

Although Leibniz's proposed solution to the problem of evil in the dialogue is fascinating, what concerns me here are its background assumptions.⁷ The text constitutes important evidence of the Metaphysics of Divinity attributed to Leibniz in chapters 6, 8, and 9. It also suggests the way in which he intends to build on these previously laid foundations. But the *Philosopher's confession* is also a nice example of the very tight rein that Leibniz keeps on his metaphysical doctrines. In the course of the dialogue, he never preaches about his metaphysical views, nor does he offer any more details than are absolutely required by his argument. Moreover, when he does display a few of his metaphysical tenets, he tosses them out without explanation. From the text itself, it is nearly impossible to discern what I have described as the underlying assumptions of his Metaphysics of Divinity. And yet throughout the text, Leibniz scatters clues which might have piqued the interest of his contemporaries, thoroughly educated as they were in Platonism. In other words, the dialogue offers an excellent example of the Rhetoric of Attraction that I attributed to Leibniz in chapter 1: in the process of solving a grand theological problem, he offers a few hints which were supposed to engage the average reader and thereby to encourage interest in the underlying metaphysical system.

But we are not the average seventeenth-century reader. In order to decipher even the most obvious clues in the dialogue, we need to turn to the Platonist assumptions which were first presented in chapter 5 and then discovered in Leibniz's writings of 1670–72. Roughly speaking, the dialogue contains evidence of the following: the major parts of the Emanative Creation Story attributed to Leibniz in chapter 6, the Platonist epistemology and its related account of mind described in chapters 6 and 8, and the distinction between the phenomenal world and the underlying world of active things presented in chapter 9. Let's consider the evidence in the *Philosopher's confession* for each of these in turn.

6. VI i 496. I capitalize only the first word in the title of unpublished texts. See xiii.

7. For an account of Leibniz's views, see Sleight, *Confessio Philosophi*, Introduction. In my study of the *Philosopher's confession* I have been greatly helped by Sleight's translation. The translations that follow are (mostly) Sleight's.

In section 3 of chapter 6, I offered the following summary of the Emanative Creation Story:

- (1) Among an infinity of emanative options (each of which is a version of the divine essence), the Supreme Being chooses one. God emanates this (selected) divine essence so as to create and sustain the world. Each individual created substance S is an instantiation of the (selected) divine essence.
- (2) For every created individual substance S, there is a complete concept in God's mind which contains all the predicates of S and that is a version of the (selected) divine essence.
- (3) For every individual substance S, there is a substantial form F that contains a set of instructions that tells F how to activate and organize its passive principle P at every moment of S's existence and that therefore functions as the ontological correlate of the complete concept in that every true predicate in the complete concept of S has a correlate in the set of instructions, and the instructions constitute the necessary condition for the true ascription of those predicates.
- (4) There is intersubstantial causation among substances and (Weak) Parallelism where the latter is understood as follows: for every substance S, the set of instructions in the substantial form F of S is constructed so that the actions of S will perfectly correspond to those of all the substances with which S interacts, with the result that all the predicates contained in the complete concept of S will be true of S.
- (5) Every instantiation of the (selected) divine essence is different from every other; that is, there are no two created substances with the same individual essence.

Leibniz is most explicit in the *Philosopher's confession* about claim (1), and even goes beyond what he said in the pre-Paris texts to offer an account of the relation between the Ideas and their instantiation in the created world. According to Leibniz, the essence of God consists in "the eternal and immutable . . . Ideas"⁸ which are "contained in the divine intellect,"⁹ where they "subsist from all eternity."¹⁰ These Ideas are "the nature of things," "the first source" of the world, and "the cause of this course of things."¹¹ The view here is that the divine intellect has in it an unspecified number of Ideas which are eternal and immutable, which constitute the divine essence, and which God wills to instantiate in the world: "the nature of the things themselves . . . is contained in the ideas themselves of these things, i.e., in the essence of God."¹² Leibniz goes beyond the texts of 1670–71 to insist

8. VI iii 137. 9. VI iii 131.

10. VI iii 122. As far I know, there has been no thorough discussion in the secondary literature of the metaphysical assumptions, what I have called the Metaphysics of Divinity, that stand behind the *Philosopher's confession*. Although Catherine Wilson offers a (beautifully written) story of Leibniz's development and glimpses some of his sources, she does not go into the details of the period. See her *Leibniz's Metaphysics*, chs. 1–2.

11. VI iii 137–38. 12. VI iii 124.

that God chooses this "series of things" among other alternatives because it is best or most harmonious. He also offers his first example of a possible, unactualized essence: "Therefore, if the essence of a thing can be conceived, provided that it is conceived clearly and distinctly (e.g., a species of animal with an odd number of feet, also a species of immortal animals), then surely it must be held to be possible."¹³ Although he is not explicit about the emanative relation between God and creatures, what he says entails that God is immanent in the world. For Leibniz, "the series of things . . . is due to . . . the divine understanding, or, what is the same, to the well known eternal ideas, or the nature of things,"¹⁴ and moreover the series of things could not have been otherwise because it necessarily reflects or instantiates that essence. He argues that since God is "a sufficient and entire *ratio* . . . with respect to the universe," it is impossible that "there there should result opposed consequences, that is, that diverse things should follow from the same thing, is as impossible as the same thing being diverse." In a marginal note, Leibniz adds: "In a certain way the universe is the image of God."¹⁵

Because the *Philosopher's confession* has no explicit discussion of Leibniz's Theory of Substance, there are few comments which are directly relevant to parts (2) and (3) of the Emanative Creation Story. But those available clues suggest that he remains committed to the account of substance entailed by these claims. Most relevant are the comments that Leibniz makes about the Principle of Sufficient Reason. Although most of these are directed toward God as the cause of the world, a few relate to individual created things. For example, Leibniz explains:

There is nothing without a *ratio*. . . . [N]othing ever exists unless it is possible (at least for one who is omniscient) to assign a sufficient *ratio* why it is rather than not, and why it is thus and not otherwise. . . . Whatever exists, at any rate, it will have all the requisites for existing; however, all the requisites for existing taken together at the same time are a sufficient *ratio* for existing. Therefore, whatever exists has a sufficient *ratio* for existing.¹⁶

For everything that exists, whether an individual corporeal substance or a feature of such a substance, there is a complete *ratio* that is in theory intelligible.¹⁷ Leibniz continues by explaining that "the proposition, *nothing is without a ratio*, is the foundation of physics and morality," which are "the sciences" that deal with "acting and suffering." In another part of the dialogue, he discusses the requisites of action where the point is that it is impossible for all the requisites of an action to exist and yet for the action not to exist. According to Leibniz, this amounts to saying "at one and the same time it exists and does not exist."¹⁸ In brief, although Leibniz does not present his Theory of Corporeal Substance in the *Philosopher's confession*, he

13. VI iii 128. 14. VI iii 121. 15. VI iii 123. 16. VI iii 118.

17. Among other things, this amounts to an implicit endorsement of the Intelligibility Assumption noted in ch. 2. See the Appendix II or the end of ch. 2.

18. VI iii 133.

endorses the Aristotelian assumptions that underlie that notion and that are assumed in parts (2) and (3) of the Emanative Creation Story.

By far the most extended discussion of a topic related to individual substance occurs at the end of the dialogue. The context here is as follows: “since minds are in themselves similar to each other or, as they say in the schools, they differ only numerically,” a question arises as to “why this mind rather than that one is exposed to circumstances which will corrupt the will” or, in other words, “what reason for diversity can there be in universal harmony?”¹⁹ It is important to understand that the theological puzzle assumes “the greatest similarity possible” among souls so that “not even an angel” or God can tell them apart. Leibniz is perfectly clear about the fact that the theological difficulty “touches upon the very thorny problem of the principle of individuation, that is, of the discrimination of things differing solely in number.” In other words, the puzzle that Leibniz faces is based on an assumption that stands in contradistinction to some of his own most basic views about substance. Neither the Principle of Causal Self-Sufficiency nor the Principle of Self-Sufficiency is consistent with the claim that the principle of individuation of a substance “stands outside the thing itself.”²⁰ In fact, part (5) of the Emanative Creation Story claims that each substance differs from every other while the conjunction of claims (2), (3), and (5) implies that each mind contains a set of instructions that individuates it from every other substance. Within this context, Leibniz’s response to the theological difficulty bears witness to his conciliatory talents: he offers an account of individuation that is consistent with his own views and yet falls within the restriction posed by the puzzle. He explains: “souls, or as I prefer to call them, minds” are all fundamentally the same and become individuated by things external to them in the sense that it is “the series of things” that produces individuation:

For to ask why this soul rather than another is subjected from the beginning to these circumstances of time and place (whence arises the entire series of life, death, salvation or damnation), and, consequently, why it passes from one circumstance to another, the series of things external to itself bringing forth things in this manner, is to ask why this soul is this soul. Suppose another soul began to exist in this same body (that is, a body of the same time and place) in the same time and place in which this one began; then this very soul that you call another, will not be another, but will be this one.²¹

Once we place this passage in the context set by the previous chapters, the following interpretation suggests itself. For each mind or substantial form *F*, before God gives *F* its set of instructions, *F* is just like every other active principle: it is (something like) a vital force with pure emanative power. *F* will acquire its own nature and thereby become distinct from every other active principle just in case God fully conceives “the series of things,” chooses where to put *F* in that series, and then assigns *F* its place. In other words, to assign *F* a place in “the series of things” is equivalent to conceiv-

19. VI iii 147. 20. VI iii 147. 21. VI iii 148.

ing the complete concept of F and then giving F a set of instructions. Or to approach the point from another direction, since each F is perfectly constructed to conform to the activities of its body or passive principle P, it follows that to attribute F to P is just to say that F has been assigned a set of instructions that corresponds perfectly to P. In Leibniz's words, "this soul is this soul" and will have the assigned "circumstances" of "life, death, salvation or damnation" because it has the set of instructions given it; and it has that set of instructions because it falls where it does in "the series of things." Although the Emanative Creation Story is underdetermined by the text, the various clues that the dialogue contains about substance strongly support the story. In fact, the following passage can be read as a rough summary of it:

The present state of things depends on the preceding state of things, the preceding state on other preceding states and so forth. Therefore, the present state depends on the series of things. The series of things depends on the universal harmony. The universal harmony depends on those well known eternal and immutable ideas themselves . . . contained in the divine intellect.²²

The *Philosopher's confession* also includes evidence of the Platonist epistemology described in chapters 6 and 8. There are clear signs in the dialogue of the Epistemological Assumption.²³ Although Leibniz is explicit neither about the fact that the Ideas, as objects of knowledge, are internal to the mind nor about the fact that it is the human understanding that attains the truth, it follows from what he says. It is clear that knowledge of God is the goal of life and that the essence of God is "the eternal" and "immutable" Ideas."²⁴ He also insists that it is the divine understanding or intellect (*intellectus*) that grasps the Ideas and that it is through cognition and reflection that human beings grasp the essence of those Ideas.²⁵ But Leibniz is particularly explicit in the dialogue about the beginning and end of the epistemological journey to the truth. Concerning the need to remove oneself from the material world and to be aided by divine light, he explains: "if someone turns to God, or what is the same, withdraws from the senses and draws back [his] mind to itself, if he seeks the truth with a sincere affection, then the darkness will be split as with some unexpected stroke of light, and through the dense fog in the middle of the night the way is shown."²⁶ Concerning the beatific vision that lies at the end of the epistemological journey, Leibniz goes well beyond what he said in the texts of 1670–71. He ex-

22. VI iii 131. In the *Philosopher's confession*, there is no evidence for or against claim (4) of the Emanative Creation Story.

23. In ch. 6, sect. 4, I showed that Leibniz was committed to the Epistemological Assumption, according to which (1) the mind is the object of knowledge in the sense that it contains the eternal truths or Ideas, (2) the mind, which is mutable and finite, will become aware of those objects only if it both turns away from the material world and is aided by the divine light, and (3) it is the intellect or understanding that is capable of grasping those truths.

24. See, e.g., VI iii 121–2, 137–38. 25. VI iii 122, 139 26. VI iii 120–21.

plains that the blessed are those who have “been admitted to God, i.e., universal harmony. . . and grasped it as if concentrated in a single stroke of vision” and who “have delight without end because they multiply it infinitely by a more distinct reflection on the parts of their joy.”²⁷

The *Philosopher's confession* also offers a thorough account of the epistemological status of the phenomena or appearances of things. As noted in section 2 of chapter 8, what the mind thinks and perceives is harmony which can be seen either as mere dissonance and variety or as consonance and unity. According to Leibniz in the second half of 1671, when the mind is “deformed” or exists “in shadow,” it only sees the variety in things or the world of becoming. Once it begins to recognize the “wondrous” interconnections among things, it glimpses the unity that exists within the variety, and begins its journey to God.²⁸ According to Leibniz in the *Philosopher's confession*: “The nature of mind is to think; therefore, the harmony of the mind will consist in thinking about harmony; and the greatest harmony of the mind or happiness will consist in the concentration of universal harmony, i.e., of God, in the mind.”²⁹ In the dialogue, Leibniz goes beyond the earlier account to explain the role that sin plays in keeping the mind in shadow and in preventing it from recognizing the unity within the variety. In his discussion of the difference between those who, like Judas, are “ignorant of God” and those who are not,³⁰ Leibniz returns to a collection of images that he first uses in the *Elements of natural law* and that I discussed briefly in sections 1 and 2 of chapter 8. In the writings of 1671, Leibniz insists that in the same way that shadows contribute to a painting and that dissonant sounds contribute to a song, so the “dissonance” of human affairs constitutes a part of the harmony of things.³¹ In the winter of 1672–73, he returns to these images and develops them. For Leibniz, because Judas and other lost souls only see the shadows and hear the dissonances, the real beauty of the painting and the song lies beyond their perception. As part of Leibniz's attempt to explain the place of sin in the most harmonious world, he insists that “the most confused discord fits into the order of the most exquisite harmony unexpectedly, as a painting is set off by shadow, as the harmony due to dissonances transforms the dissonances into consonance (just as from two odd numbers an even number comes about).”³² Judas and other sinners are trapped in ignorance because they neither see the painting nor hear the song; for them, there are only shadows and dissonance. Leibniz continues:

Given that the whole is pleasing, it does not follow that each part is pleasing. Even if the entire harmony is pleasing, the discordant aspects of it in themselves nevertheless are not pleasing, in spite of the fact that they are mixed together according to the rules of art. . . . Only the whole is pleasing, only the whole is harmonious.³³

27. VI iii 139. 28. VI i 464–65. 29. VI iii 116–17. 30. VI iii 120.

31. See esp. VI i 464, 485.

32. VI iii 126. For another use of these images in the dialogue, see VI iii 117.

33. VI iii 130.

In chapter 5, section 3, I discussed the Platonist Principle of Harmonized Plenitude and noted the fact that Aquinas and other scholastics embraced the idea that the goodness of the world is partly a function of the order among beings.³⁴ In the *Philosopher's confession*, Leibniz more fully develops his rendition of this assumption. As fascinating as his proposals are, what interests me now is the underlying epistemological point and its close relation to Emanative Harmony. In chapters 6 and 8, I attributed to Leibniz Emanative Harmony, whose relevant claims here are that every creature instantiates the (selected) divine essence and that God is the unity in the world. I also noted the fact that for Leibniz, before one can recognize the immanence of God in the world, it is necessary to look beyond the dissonance and variety immediately obvious in the appearances to their interconnections and unity. As noted in section 2, chapter 8, the “splendid” variety of things can be seen either as “the highest consonance” or as the basest “confusion.” Making good use of the analogy with art, Leibniz insists in 1671 that the world will be better and more beautiful when there is an “unexpected” unity among things, “where no one would suspect a connection.”³⁵ That is, while variety is a good-making feature of the world and adds significantly to worldly beauty, it is also a dangerous trap: as long as the perceiver only focuses on the variety, the unity of things will not be evident. In his dialogue on evil, Leibniz goes beyond what he said in the earlier texts to display the dangers and delights of worldly variety and to show how closely related the perils of the appearances are to the joys of “unexpected” unity: “*Harmony and discord . . . consist in the relation of identity to diversity*, for harmony is unity in many things, and it is the greatest [where there are the] greatest number of things.” Although the latter are “disordered in appearance [in speciem],” they may be “reduced unexpectedly by a wonderful *ratio* to the greatest symmetry.”³⁶ As he vividly writes, the mind can be “pure or infected” and can “proceed correctly on the royal road of duties, or stagger through a wasteland.” Although “the means of escaping” the wasteland “is in our power, many do not use it.” For many, “it does not even come into their minds” that they are “able to escape,” so that “while seeing they do not see, while hearing they do not hear.” However, “like a light in the middle of shadows gliding through a crack, the means of escaping is in our power,” and it is possible for each person “as if in the blink of an eye, by an instantaneous metamorphosis” to become “infallible and prudent, and happy beyond the wise.”³⁷ For Leibniz, it is impossible for human beings who are:

not yet purified . . . to grasp with the mind the whole melody, not recognizing that these particular dissonances interspersed in the melody make the harmony of the universe yet more exquisite . . . so it is with the essence of harmony that the discor-

34. See Appendix II, ch. 5 for a summary of this and related assumptions.

35. VI i 484–85. 36. VI iii 122.

37. VI iii 135. Notice the relationship to the Biblical passage that describes the resurrection from the dead “[i]n a moment, in the twinkling of an eye. . . .” 1 Corinthians 15:52.

dant diversity be redeemed wonderfully by an unexpected unity; which not only those who write songs, but also those who write stories . . . take as a rule of art.³⁸

By such means, Leibniz confirms and elaborates upon the epistemology of the earlier texts.

In the *Philosopher's confession*, Leibniz says almost nothing about the details of his Metaphysics of Substance and he offers no direct evidence of Complete-*Ratio* Phenomenalism, or even of phenomenalism. The absence of a full-blown discussion of these topics is not surprising given that the point of the dialogue is the rather grand topic of the problem of evil. But it is noteworthy that Leibniz does divulge his commitment to a distinction that we found at the center of his *Studies on the universal characteristic* and that is importantly related to Complete-*Ratio* Phenomenalism. In the discussion of Leibniz's notes on Wilkins' book in chapter 9, I noted a distinction between quantity and quality, where the principle of the former "concerns existence" while the principle of the latter is the Principle of Sufficient Reason. As I suggested there, the study of quantity is the study of the phenomenal objects that are caused by the perceiving mind, whereas the study of quality concerns the underlying active mind-like substances whose actions are instantiations of the (selected) divine essence. We find the same distinction in the *Philosopher's confession*. According to Leibniz, "the foundations" of the sciences "would be subverted" if it were not the case that ultimately all reasons go back to something "that is necessary, that is, has its *ratio* in itself." He continues:

For just as the proposition, *the whole is greater than the part*, is the principle of arithmetic and geometry, [that is, it is the principle] of the sciences of quantity; similarly, the proposition, *nothing is without a ratio*, is the foundation of physics and morality, the sciences of quality, or, what is the same (for quality is nothing other than power of acting and suffering [agendi patiendique potentia]) of action, thought, and certainly motion.³⁹

Against the background set in the last chapter, this passage can be interpreted as follows. There are two kinds of science and hence two objects of study in the world. There is the science of quantity, which studies the extended phenomenal objects and to which the principle of arithmetic and geometry applies. And there is the science of quality, which studies the underlying active objects and to which the Principle of Sufficient Reason applies. The suggestion is that for every quality *f* of a substance *S*, whether *f* is an action, thought, or motion, there is a sufficient reason for *f*. It is noteworthy that the *Demonstration of first propositions* (which I discussed briefly in section 4, chapter 8 and which contains Leibniz's first explicit demonstration of the Principle of Sufficient Reason) also contains a demonstration of the "first" proposition, "The whole is greater than the part." In the same essay, Leibniz insists that "the essence of mind is action on it-

38. VI iii 146-47. 39. VI iii 118.

self”⁴⁰ and that the Principle of Sufficient Reason constitutes “the foundation of the sciences of mind and motion.”⁴¹

In summary, in the course of his first full-fledged discussion of the problem of evil in the *Philosopher's confession*, Leibniz drops a number of clues about his core metaphysics in general and about his Metaphysics of Divinity in particular. Although these tidbits are brief and undeveloped, they are consistent with the metaphysical doctrines that I have attributed to him and, in some cases, display a slight elaboration of those tenets. Among other things, we have discovered in the dialogue major parts of the Emanative Creation Story and the Epistemological Assumption; and we have glimpsed some of the Aristotelian assumptions that underlie the Theory of Corporeal Substance.

Physical papers of 1672

Between his arrival in Paris in March 1672 and the winter of 1672-73, Leibniz wrote a number of important papers on motion, the continuum, and related physical topics. As Arthur has rightly shown, these papers contain much of interest concerning Leibniz's views about the continuum.⁴² As Garber has argued, they also indicate Leibniz's continued devotion to the physics of the *New Physical Hypothesis* and the *Theory of Abstract Motion*.⁴³ What has not been noticed about these texts, however, is that they contain well-placed clues to Leibniz's underlying metaphysics. These papers share the rhetorical restraint of the *Philosopher's confession*: they are silent about the tenets of the core metaphysics except when the argument requires a brief account and then, when an account is given, there is as little explanation and elaboration as possible. But also like the dialogue, once these comments are placed within the philosophical context set in the previous chapters, they can be seen to contain a good deal of important material.

Throughout his Paris writings on physical topics, Leibniz offers enticing glimpses of his core metaphysics. He defines substance as that which acts, and body as that whose actions and passions are motion.⁴⁴ He insists that divine mind is the only mind “devoid of body” or “free of body,” and thereby implies that created minds are not so “free.”⁴⁵ As we will see, he insists that all creatures bear a sympathetic relation to all others, regardless of how “remote” from one another. And he defines the existence of bodies wholly in terms of the perceptions of minds. Although the evidence is scant and scattered, it is possible to discern an ontology in which there is (at least): a divine mind; created minds, which act and are accompanied by a body; corporeal substances or bodies whose states consist of actions and passions and whose existence depends on the perceptions of minds; and a world of creatures who stand in a reflective relation to one another.

40. VI ii 482. 41. VI ii 480. 42. Arthur, *Labyrinth*, Introduction.

43. Garber, “Leibniz: Physics and Philosophy.”

44. VI iii 83. 45. VI iii 100-01.

Unlike the *Philosopher's confession*, the physical papers are surprisingly explicit about Leibniz's phenomenalism, and even contain evidence of Complete-*Ratio* Phenomenalism. In section 1 of chapter 8, I claimed that the increasing gap between the apparent and the real was part of the motivation behind Leibniz's acceptance of this phenomenalism. It is striking, therefore, that in his very first Paris note on a physical topic, he demands "a true and unique cause of the phenomena," where the cause be "sufficient."⁴⁶ In one of his first lengthy essays, entitled *Certain physical propositions*, he succinctly presents both his Complete-*Ratio* Phenomenalism and its related (Strong) Parallelism. In the midst of this lengthy discussion about body and motion, he claims that against Descartes, he intends to explain extension in terms of the perception of existence. He first proclaims that: "To Exist is nothing other than to be Perceived," and then goes beyond anything said in the pre-Paris texts to assert that whether the perception is "by us" or "by the Author of things," the point is that "to be perceived is nothing other than to be pleasing to him or [seu] to be on account of Harmony."⁴⁷ Although Leibniz does not explain his point in this passage, a few paragraphs later he exclaims that "nothing is more wonderful in the whole of Philosophy" than that diversity depends on mind "from whose nature follows harmony, that is, diversity compensated by identity."⁴⁸ Following the interpretation of perception and thinking offered in section 2 of chapter 8, harmony is what we think or perceive and, for each mind F, F's perception of harmony is caused by F. Once we see Leibniz's comments in *Certain physical propositions* within the context of his earlier account of perception, it would seem that without elaboration or explanation, Leibniz proclaims Complete-*Ratio* Phenomenalism in the middle of this essay on motion.

Nor is that all. In the same part of the text, Leibniz goes well beyond what he said in the essays of 1671 to emphasize the close parallelism between the perception of matter and the action or passion of the underlying active substance. He asserts:

Having already posited that to exist is to be perceived, it is necessary that Body exists, [since] it is; to effect a perception [is for it] to be moved or at least to endeavor, because if everything were quiet, not even God could distinguish those things from nothing. Whence, it is able to be understood that matter and motion or endeavor are the same, and that their differences are fictions just like between a subject and a characteristic attribute [subjectum adjunctumque]. Therefore, matter is counterbalanced by motion, because truly, where there is more motion there is also more matter although we do not perceive this except by effect.⁴⁹

In the context of Leibniz's *Studies on the universal characteristic*, and especially definitions [18] and [19], the following interpretation of this passage suggests itself. The underlying reality or corporeal substance R constantly acts, and each of the states that it produces by acting is either an action (that

46. VI iii 3. For a summary of Complete-*Ratio* Phenomenalism and related doctrines, see Appendix II, ch. 8.

47. VI iii 56. 48. VI iii 57. 49. VI iii 56.

is, a state of endeavor) or a passion (that is, a state of being moved or acted upon). For every such “body” R, it can be approached in two ways: there is the real R or R qua active thing, and there is the phenomenal R or R qua sensory object. Each sensory R – that is, each phenomenal R – is a mode of R qua active thing. Moreover, for every perceiving substance S, what the existing world is for S is just what S perceives. But the passage goes beyond the definitions in the *Studies on the universal characteristic* in its account of the close parallelism between the active underlying thing and the phenomenal body. Leibniz is now prepared to tighten the correspondence between the states of the underlying active thing and the states of the perceiving mind. Consider the first part of the argument in the passage. Leibniz maintains that for a substance R, if R were to cease acting, then R would be entirely imperceptible, even to God. Part of Leibniz’s point here might be that because S is a substance whose whole nature it is to act, it would follow that S would cease to be when S ceased to act. But I think that there is more to Leibniz’s comment than even this suggests. The point is that there is a dependency relationship between R qua sensory thing and R qua active thing. This relation, which I have called (Strong) Parallelism and which is a version of what the mature Leibniz describes as well-founded phenomenalism, is such that a substance S will have a perception of R qua sensory thing if and only if R qua sensory thing perfectly corresponds to the actions and passions of R qua active thing. That is, Leibniz means to claim that (the relevant clear and distinct) perceptions are such that they correspond to the activities of real mind-like substances and, moreover, the activities of the substances perfectly parallel the perceptions. Thus, in the quoted passage, Leibniz’s point is that for any active corporeal substance R, there must be a substance S that has R qua sensory thing, and therefore that R exists for S.

The next part of the argument in the passage conforms to this interpretation. Matter and motion or endeavor are the same in that matter (as a state of a perceiving mind) is perfectly and directly coordinated with motion or endeavor (as a state of an acting substance). But what does Leibniz mean when he says that there is no more difference between them than there is between a subject and a characteristic attribute? For help in deciphering the point, we need to return to the definitions in his notes on Wilkins. Although the Latin term *adjunctum* is ambiguous in a number of ways, Leibniz defines it as “an attributed accident,” and offers “[t]he most eloquent Cicero” as an example.⁵⁰ With these clues, we can turn to a seventeenth-century philosophical lexicon for further aid: “the *adjunctum* is really distinct from the subject” although, when the former is given, the latter “necessarily is,” and moreover the former is “inseparable” from the latter, although not an essential property of it.⁵¹ Making use of Leibniz’s example, the eloquence

50. VI ii 499.

51. For the variety of senses of the term, see Micraelius, *Lexicon Philosophicum*, 44. The account that I give here is one among several. Leibniz does not use the term during his Paris period except when taking notes on another text (see VI iii 336f).

of Cicero is distinct from him, and yet that eloquence requires the presence of Cicero. The eloquence is inseparable from its subject in that wherever Cicero is, there is eloquence. How exactly is this relation between Cicero and his eloquence analogous to the relation between matter and motion or endeavor? Again, Leibniz's definitions in *Studies on the universal characteristic* offer some help. According to definition [6], an accident is a "mode of substance by which it can be thought."⁵² Once these clues are pieced together, the second part of our argument can be seen to assume (Strong) Parallelism between the underlying active thing (R qua active thing) and its mode (R qua sensory object). R qua sensory object is a mode of R qua active thing, and as a mode, can be thought. Like the relation between the eloquence and Cicero, there will be no mode of R qua active thing if there is no R qua active thing and, moreover, there can be no R qua active thing if there is no such mode. Each perception of R qua sensory thing, that is, each mode of R qua active thing, is inseparable from the activity of R qua active thing. It is in this sense that "matter is counterbalanced by motion."

There is further evidence of this (Strong) Parallelism in other physical papers of 1672. One of the most striking features of Leibniz's comments on this topic is their explanatory restraint. Although the texts offer clues to his position, these are often nearly incomprehensible on their own. A case in point is the argument that he offers for the proposition, "*If there were no minds, all bodies would be nothing.*" The argument runs as follows: "*to be a body is . . . nothing more than to be moved. If there were no minds, all bodies would be nothing*" because "*in the end . . . to be perceived by a mind is truly what body and motion are.*"⁵³ Outside the context provided by the developmental story of the previous chapters, it is nearly impossible to grasp Leibniz's point. For example, from the proposition itself, it is unclear whether the minds on whose existence bodies (somehow) depend are the incorporeal substances that endeavor or the minds that perceive the bodies. Although the first part of the demonstration of the proposition implies the former, the second part entails the latter. Nor does Leibniz offer other clues in the text. In a related paper, he defines body as "that whose action and passion is motion,"⁵⁴ but he does not explain how the active body is related to the phenomenal one. However, once we identify the assumption that stands behind the first part of the argument, its point becomes transparent. The assumption is that for every corporeal substance or body R, which is the real underlying thing whose every action and passion is motion, there is the R qua sensory thing. Since the phenomenal R will exist if and only if it is perceived, it follows that as Leibniz writes, "to be perceived by a mind is truly what body and motion are." In order to grasp the full significance of Leibniz's point, we need to import into this text a version of (Strong) Parallelism. The assumption here is that for a perceiving substance S, S will perceive R qua sensory object if and only if R qua active thing acts in the appropriate way. Given this

52. VI ii 488. 53. VI iii 100. Leibniz's emphasis. 54. VI iii 83.

assumption, it follows that there will be no bodies qua real things if there are no perceiving minds. It is in this sense that “[i]f there were no minds, all bodies would be nothing.”

Let’s take stock of the metaphysical implications of the physical papers of 1672. In the essays discussed in this section, we have uncovered evidence of phenomenalism, Complete-*Ratio* Phenomenalism, and (Strong) Parallelism. In the introduction to chapter 8, I explained that on my account, Preestablished Harmony is equivalent to the Complete-*Ratio* Theory of Substance and (Strong) Parallelism. But I also noted that in a world constituted entirely of minds and their thoughts, Complete-*Ratio* Phenomenalism entails the Complete-*Ratio* Theory of Substance. Thus, in the physical papers discussed so far, there is evidence of Preestablished Harmony.

Despite Leibniz’s reticence in articulating some of his most basic assumptions, he is not hesitant in proclaiming their theological benefits. In the conclusion to a text of the winter of 1672–73, he offers an argument for the existence of God based on his Complete-*Ratio* Phenomenalism. The implicit premise on which the argument is based is that for a phenomenal body R, the existence of R depends entirely on the perception of it by some mind. According to Leibniz, neither the existence of a particular body nor the existence of “the aggregate” of bodies can depend on any particular created mind since “it is known from experience that everything is not perceived any the less by others because I am absent, and the same is true for every individual.” Rather the existence of bodies depends on God, that is, a “Mind,” that “exists per se.” According to Leibniz, from this and related points, “great things” follow about the “necessity of Minds, . . . the mode of thought and the immortality of the soul.”⁵⁵

Besides assuming Complete-*Ratio* Phenomenalism and (Strong) Parallelism, the physical papers of 1672 also presuppose Leibniz’s vitalism, where the basic idea is that the created world is constituted of vital mind-like beings. Consider the conclusion to *Certain physical propositions*, where he insists on the great theological importance of his physics: “Therefore, it is necessary that mind be added to Matter, or [seu] that incorporeal substances be supposed.” There is nothing “more divine in the whole of natural Philosophy.”⁵⁶ Passages such as these suggest a story similar to the one offered by Leibniz in his *New Physical Hypothesis* and discussed in section 3, chapter 7.⁵⁷ The point is that the “Spirit” of God (here, “mind”) extends its power to all of creation, whereupon this undifferentiated vitality is organized into vital beings (here, “incorporeal beings”). The recognition of Leibniz’s vitalism in the physical papers of 1672 helps to explain the enormous theological importance that these writings attach to the active incorporeal beings in nature. Throughout the texts, he emphasizes the fact that

55. VI iii 100. Leibniz’s emphasis. 56. VI iii 67.

57. Given the account of matter (in definition [18]) in Leibniz’s *Studies on the universal characteristic*, it does not seem far-fetched to take matter here to be phenomenal. See ch. 9, sect. 1.

the activity, diversity, and harmony of the world depends on these active, incorporeal substances.⁵⁸ For Leibniz, “the greatest of all truths,” namely, harmony, depends on the fact that nature is full of minds. Concerning the importance of the demonstration that nature must suppose “incorporeal substances,” he proclaims: “As for me, I dare say with certainty that I have not been more affected by any other demonstration.”⁵⁹

In his physical essays of 1672, Leibniz reveals few details about the nature of these mind-like beings, but he is unusually verbose about their interrelations. This is not due to a breakdown in his characteristic explanatory restraint. Rather, he has not devised a satisfactory solution to the problem of the continuum, and he very much needs the Platonist relation of sympathy to explain cohesion among the parts of a body.⁶⁰ The relation plays an important part in his physics: roughly, bodies are more or less congruent and cohesive depending on the degree of sympathy that they have with one another. Concerning “cohering bodies,” he demonstrates that they are “sympathetic” by noting that “one cannot be acted on without the other.” According to Leibniz, “every passion of bodies is to be moved or impelled by another. Therefore it is necessary that cohering bodies sympathize.”⁶¹ The sympathetic relation varies in degrees in that cohering bodies are “absolutely” sympathetic,⁶² whereas “non-congruent” bodies are not. According to Leibniz, there is no “sensible” change in the universe without an “insensible change” even in its “remote” parts.⁶³ In the last chapter, I revised my account of Reflective Harmony. On the basis of Leibniz’s comments in his *Studies on the universal characteristic*, I showed that he goes beyond the traditional account of sympathy to claim that every substance communicates insensibly with every other, and I argued that he conceives the correspondence between the states of the substances as coordinated fluctuations in the clarity of the instantiation of the (selected) divine essence contained in every created substance. Although in the physical papers, Leibniz does not explain exactly what constitutes sympathy, everything he says is perfectly consistent with the account given in chapter 9. In other words, the details of Leibniz’s physics are consistent with Reflective Harmony, according to which every substance thinks or reflects the entire world and contains every other substance in the sense that it perceives all the states or thoughts of all the others. As Leibniz writes in a physical paper of late 1672, “There truly is in the world what Hippocrates asserted about the human Body: everything flows together and engages in harmony.”⁶⁴

But what exactly does Leibniz’s use of the relation of sympathy tell us about his vitalism? According to the interpretation proposed in chapter 7, by the winter of 1670–71, Leibniz believed that inert matter could have no positive features and that the passive principle in nature was constituted of

58. See, e.g., VI iii 57, 67, 72, 79, 100, 146. 59. VI iii 67.

60. For the ancient Stoics and for natural philosophers scattered throughout the history of philosophy, sympathy has been considered a principle of nature. See ch. 5, sect. 5.

61. VI iii 80. 62. VI iii 85. 63. VI iii 91. 64. VI iii 87.

vital mind-like beings. Once we place the physical papers of 1672 in this light, the vitalism assumed within them becomes fully evident. Since, for Leibniz, only minds can act, it follows that minds are the only sorts of things that can have reflective and sympathetic relations. In other words, given the background assumption about the relation between mind and activity, the sympathy and Reflective Harmony that Leibniz attributes to all the parts of the world is proof of his vitalism. As he explains in the winter of 1672–73: “I take as a principle of every science, not only [the science] of motion but equally [the science] of mind . . . that no endeavors die away, but everything in the universe is *efficacious and perpetual*, even though they . . . are not [sensibly] perceived.”⁶⁵ As a conclusion to this final point about the physical papers of 1672, I offer one of Leibniz’s many cryptic autobiographical comments. In the late 1690s, he writes to Thomas Burnet: “My views in philosophy . . . take a middle way between Plato and Democritus, since I believe that everything takes place mechanically, as Democritus and Descartes would wish, contrary to the opinion of More and the like; at the same time everything happens according to a vital principle and following final causes, everything being full of life and perception, contrary to the opinion of the followers of Democritus.”⁶⁶

In summary, in the physical papers of 1672, we have found evidence of Complete-*Ratio* Phenomenalism, (Strong) Parallelism, vitalism, and Reflective Harmony. For the sake of convenience, let’s summarize the revised version of (Strong) Parallelism unearthed in these papers.

- (1672) (*Strong*) *Parallelism* is the view that created substances are in perfect correspondence with one another. This means, among other things, that a substance S will have a perception of R qua sensory thing if and only if R qua sensory thing perfectly corresponds to the actions and passions of R qua active thing.

On the true method in philosophy and theology

To complete my account of Leibniz’s views in the early Paris years, I turn to an essay that contains the most thorough presentation in our period (roughly 1672–73) of his core metaphysics. In this essay, *On the true method in philosophy and theology*, he describes in detail both his philosophical intentions and his methodological strategy. In an attempt to articulate the goal of his philosophy, Leibniz returns here to a distinction that we found in the texts of 1670–72. As noted in section 1 of chapter 8, Leibniz became increasingly concerned in 1670–71 with the gap between the apparent and the real. In the texts of 1670, he is especially keen to emphasize the fact that while the new mechanical philosophy has allowed greater control of nature,

65. VI iii 95. Leibniz’s emphasis.

66. G III 217. In the same passage, Leibniz recognizes the similarity of his views to those of Anne Conway.

it has “conveyed little” about the “nature of things.”⁶⁷ In the definitions for *Studies on the universal characteristic*, Leibniz described the distinction between the apparent and the real in terms of quantity and quality, where the former concerns the objects of perception and the latter the underlying active things. In the physical papers, he distinguishes between a science of motion and a science of mind.⁶⁸ In *On the true method in philosophy and theology*, written in the period 1673–75, he summarizes his present position on a group of related topics:

For I reflected as follows: Geometry clarifies configurations and motions; as a result we have discovered the geography of lands and the course of the stars, and machines have been made which overcome great burdens. . . . But the science which distinguishes the just man from the unjust, and through which the secrets of the mind are explained and the path to happiness is paved, is neglected. We have demonstrations about the circle, but only conjectures about the soul; the laws of motion are presented with mathematical rigor, but nobody applies a comparable diligence to research on the secrets of thinking.⁶⁹

Leibniz is now prepared to place geometry and the mechanical philosophy in the same category, where the idea is that they constitute the science of the phenomena. For Leibniz here, geometry is the science that treats the extended phenomenal object. The other science is the science of mind and of thinking. It is the latter that Leibniz is primarily interested in studying. In the remainder of this essay, he describes both the means to and the ends of this science. In the process, he outlines his intellectual history and summarizes his present metaphysical views and interests. Not only does the account of his philosophical evolution cohere wonderfully with the interpretative story of chapters 1 through 9, the summary that he offers of the motivations behind his *Metaphysics of Method, Substance, and Divinity* nicely conforms to the ones presented in my account.

Concerning method, in *On the true method in philosophy and theology*, Leibniz proposes a strategy that combines the best of the scholastic approach with the mathematical method of recent philosophers. In a sense, his goal is to create a methodological revolution by combining the best of all current strategies. As he sees it, neither the scholastic nor the mathematical approach is adequate and the failure of each has encouraged intellectual chaos and atheism. According to Leibniz: “It is a wise saying of that distinguished man Francis Bacon: a little philosophy ‘inclineth man’s mind to atheism, but depth in philosophy bringeth men’s minds about to religion.’ I say the same to our century.”⁷⁰ Leibniz’s contemporaries will avoid atheism and find the truth once they combine the two methodological approaches. Unlike the new philosophers who have too long ignored theological questions and who would allow “the whole of scholastic doctrine” to be “rejected” and unlike the scholastics whose “admirable reflections” are

67. VI ii 329. 68. E.g., VI iii 95. 69. VI iii 155: W 59.

70. VI iii 157: W 62. My translation often differs significantly from Wiener’s.

in need of clarification “by a mathematically schooled mind,”⁷¹ Leibniz wants to combine the theological insights and “marvelous subtlety” of scholastics like Aquinas and Gregory of Rimini with “the mathematical rigor” of the new science.⁷² He is concerned to use his method in all areas of philosophy and especially in theology: “I thought such a task all the more useful because I saw dangerous expressions slipping into men’s souls; they are a sort of mathematical larva from which arises a false philosophy, and with that the whole of scholastic doctrine would be rejected.”⁷³

Leibniz calls his philosophy a “religious” one and promises that it will lead wayward souls to the truth. His description of this philosophy conforms neatly to the epistemological goal of his *Metaphysics of Divinity* as I described it in chapters 6 and 8. About the relation between God, as the emanative source of the world, and the world itself, Leibniz writes:

the value of a religious philosophy will be recognized by those who return to it, and mathematical studies will be used partly as an example of more rigorous judgment, partly for the knowledge of harmony and of the idea of beauty, experiments on nature will lead to admiration for the author of nature, who has expressed an image of the ideal world in the sensible one, so that all studies finally will lead to happiness.⁷⁴

For Leibniz, in *On the true method in philosophy and theology*, the proper approach to the fundamental metaphysical and theological questions will lead to philosophical knowledge and personal happiness.

For our purposes, one of the most striking features of Leibniz’s essay is the account of his *Metaphysics of Substance*. Both the theory of substance that he describes and the description of its development that he presents conform to the interpretative story of the previous chapters. As Leibniz explains, although he accepts the mechanical explanatory model in physics, he is thoroughly aware of the inadequacy of its underlying metaphysics: “The theory of size and shape” has been properly developed, but “the innermost nature of motion” is not yet understood. Part of the reason for this failure is that certain “important philosophers . . . attributed the essence of matter only to extension.” This conception of corporeal substance, insists Leibniz, is inconsistent with “the mysteries of faith.”⁷⁵ By such means, Leibniz summarizes one of the main metaphysical conclusions of chapter 2, namely, that the mechanical philosophers have not grasped the *Metaphysics of Substance* that must support their physics. Consistent with his claims in the April 1669 letter to Thomasius, he insists here that the mechanical philosophy has its historical roots in the philosophy of Aristotle. He writes: “It is an indubitable fact, and one recognized also by Aristotle, that everything in nature is derived from size, figure, and motion.” In order to correct the mistakes of his contemporary mechanical philosophers, Leibniz insists that “it

71. VI iii 156: W 61. 72. VI iii 155: W 58-59. 73. VI iii 156: W 61.

74. VI iii 157: W 62. In this passage, we find what is almost certainly Leibniz’s first use of the term *expressio* to describe the relation between an emanative source and its product. See sect. 3 for more on this relation.

75. VI iii 157: W 62-63.

is the task of Metaphysics to examine the change, temporality, and continuity in the universe. For motion is only a kind of change." By such means, Leibniz advertises his core metaphysics, where the idea is that the world is constituted of substances with continually changing states. He explains: "Insofar as the nature of motion has not been understood, due to the fact that important philosophers attributed the essence of matter only to extension, there has resulted a notion of bodies, previously unheard of, which fails to do justice either to the phenomena or the mysteries of faith."⁷⁶ Leibniz succinctly describes his solution to this problem: "For without doubt it can be demonstrated that extension is incapable of either action or passion, unless qualities are added."⁷⁷ But which qualities are these? Consistent with my account in chapter 7 of the evolution of Leibniz's views on matter and the passive principle in nature, he explains that the Cartesian account of body as extension evaded the difficulty of "the Holy Eucharist." Leibniz explains: "For if body and space are one and the same, how can we avoid the consequence that in different spaces or places there must be different bodies." Nor was it acceptable for natural philosophers like Gassendi to add "a certain resistance" to the notion of extension. According to Leibniz, "what is needed is that some positive notion" be added "to the idea of body."⁷⁸

Leibniz goes on to offer an account of extension that is consistent with the mysteries of the faith and that adds the right positive feature. He writes:

What must we then add to extension in order to complete the notion of body? Nothing except that to which perception testifies. It informs us at once of three things: we perceive, and that what is perceived is various and composite or extended. Therefore, action has to be added to the notion of extension or variety. Therefore, body is an acting extended thing [Agens extensum], and a substance may be said to be extended if we hold that every substance acts [agere] and every acting thing [agens] is called a substance. Now we can show from the inner principles of metaphysics that what is not active does not exist, for there is no such thing as mere potentiality to act. . . . Moreover, every endeavor is an action.⁷⁹

In section 2 of chapter 8, we saw Leibniz equate the variety in the world with the appearances of things. In a lengthy discussion of *On endeavor and motion, perceiving and thinking*, we discussed Leibniz's attempt to explain the existence of bodies in terms of the appearances of mind. In chapter 9, I proposed that Leibniz's definition of matter in the *Studies on the universal characteristic* implied that a body was an apparent object though grounded in the real. We have just seen the same general ideas expressed in Leibniz's physical papers of 1672. In the passage just quoted from *On the true method in philosophy and theology*, he equates extension with variety. The implication is that bodies are apparent objects, which are part of the variety of things.

But what exactly underlies the extension and variety? In the quoted passage, Leibniz makes a comment about body that is very difficult to com-

76. VI iii 157: W 62. 77. VI iii 157: W 62–63.

78. VI iii 157–58: W 63. 79. VI iii 158: W 64.

prehend. It is clear that he wants to claim that body is somehow extended and somehow active, but it remains unclear in what the extension consists. There are two alternative ways to read the Latin and interpret the claim: either there are extended things that are active or there are acting things that are extended. The first alternative seems more plausible since it is not clear how to make sense of the second. But let's not be hasty. The Prearranged Diffusion Relation proposed in section 3 of chapter 8 neatly explains how the activity of something can be extended without being material. There the idea was that a dominant mind *F* in a substance *S* could itself be unextended and yet diffuse a wider or smaller expanse of passivity. When Leibniz first proposes the theory, he is concerned to solve the problem of resurrection. In chapter 7, I showed that in an attempt to solve that problem, he introduces the idea of a core of substance, according to which the core is able to extend its power of diffusion to a large expanse of body or to shrink down to an invisible center. In chapter 8, we noted how neatly this Diffusion Relation solved the theological problems of the Eucharist, where the solution depended on the capacity of the diffusive power of Christ to apply simultaneously to bodies spread throughout Christendom. That is, Leibniz's solutions to these difficult theological problems depended on the fact that the *activity* of the core could be extended. Does Leibniz have this alternative in mind in the passage quoted above?

Apparently so, for he goes on to proclaim that among the many benefits of this conception is the fact that it solves exactly these theological problems. In fact, I propose that we read Leibniz's concluding remarks to the *On the true method in philosophy and theology* as a summary of his core metaphysics in general and the Theory of Corporeal Substance in particular. He writes:

There are certainly many and important things to be said . . . about the principle of activity or what the scholastics called substantial form, from which a great light is thrown on Natural Theology and . . . the mysteries of faith. The result is that not only souls but all substances can be said to exist in a place only through the operation of their active principle, that souls can be destroyed by no power of body; and that every power of acting [omnem agendi vim] exists from the highest mind whose will is the final reason for all things, the cause being universal harmony; that God as creator can unite the body to the soul, and that in fact, every finite soul is embodied, even the angels are not excepted, in which the true philosophy is in agreement with the teaching of the church fathers; finally, that the appearances differ from a substance.⁸⁰

What Leibniz writes here neatly parallels what he proposed to Arnauld in November 1671: because of his conciliatory method and, in particular, because of his resurrection of the scholastic notion of substantial form, his metaphysics corrects the mistakes of his modernist contemporaries and offers an explanation of the Eucharist that will satisfy Catholics and Lutherans alike. On the basis of the distinction between substance and appearance,

80. VI iii 158: W 64–65. Wiener's translation is incomplete.

Leibniz insists that he can explain the multipresence of the same body and show that the Lutheran doctrine of consubstantiation follows from the Catholic doctrine of transubstantiation. All the fallacies previously associated with such theological doctrines “can be avoided once the true and inevitable notion of substance is understood. Of what great significance these Theorems have for the firm foundations of religious faith and for peace among the Churches, those who understand can estimate.”⁸¹

In this section, we have examined a dialogue on the problem of evil, several essays on topics in physics, and a lengthy discussion of methodological matters. In these sundry texts, we have found evidence of Leibniz’s conciliatory method, glimpsed the Aristotelian assumptions that underlie the *Metaphysics of Substance*, witnessed the careful application of a part of his *Theory of Corporeal Substance*, and seen a thorough use of the major tenets of the *Metaphysics of Divinity*. As a group, these writings bear witness to the fact that during his Paris years, Leibniz applies his *Metaphysics of Method, Divinity, and Substance* to the philosophical questions that interested him. I claimed in the introduction to this chapter that during his Paris period, Leibniz submitted the tenets that constitute his core metaphysics to a number of grueling philosophical examinations. In this section, there is ample evidence that those core doctrines survived their first battery of tests.

2. Substance and plenitude, 1676

In the autumn of 1675, Leibniz faced a number of dramatic changes. The most significant of these were the invention of a major part of his calculus, the development of a friendship with Ehrenfried Walther von Tschirnhaus, who slowly began to familiarize him with the main features of Spinoza’s metaphysics,⁸² and the increasing likelihood that he would soon have to leave Paris for the philosophical backwaters of Hanover.⁸³ Although we

81. VI iii 159: W 65.

82. The relation between Leibniz and Tschirnhaus is both interesting and important. Tschirnhaus had imbibed the Cartesianism prominent in Leiden and had been in Amsterdam (in 1672–73) where he learned about the philosophy of Spinoza. In the autumn of 1675, Leibniz befriended the young German who was the first to introduce Leibniz to the philosophy of Spinoza’s *Ethics*. For a recent account of their relationship, see Kulstad, “Leibniz and Tschirnhaus.”

83. As a Lutheran who was unwilling to convert to Catholicism, Leibniz had been unsuccessful in finding gainful employment in Paris. Although he believed that his intellectual goals could best be achieved in Paris and very much wanted to remain in that intellectual center, it must have been obvious to him by the end of 1675 that there was little chance of procuring employment. It was a mixed blessing, therefore, when in January 1676 he accepted an offer to become Counselor to Johann Friedrich, Duke of Hanover. See Aiton, *Leibniz*, ch. 3, esp. 53–54. On the same day that Leibniz accepted the position, he wrote a letter to a powerful Parisian requesting support for his scientific work. A likely motivation behind the sudden outpouring of philosophical ideas in early 1676 was to articulate some of his philosophical ideas so that they might be used to gain recognition and employment.

cannot be certain, it seems highly likely that the combination of these three changes in Leibniz's life motivated him to return to the hard work of metaphysics in the winter of 1675-76.

Theory of corporeal substance⁸⁴

I have argued that from the beginning of Leibniz's philosophical career, the most important feature of substance is that it is active, where the activity in question is closely tied to self-sufficiency. Most of his Aristotelian assumptions are grounded in the relation between substantial activity and self-sufficiency. On the other hand, his Platonist assumptions reveal the connection between self-sufficiency, unity, and perfection. As the Supreme Being Assumption claims, each of these features is a function of the other. Because of the divine-like nature of mind, Leibniz was also convinced relatively early that every created active principle must be rooted in a form of passivity and limitation. The result of the evolution of these views in the pre-Paris years is the Theory of Corporeal Substance according to which, for each corporeal substance S, whether human or non-human, the nature (or core) of S is constituted of a mind-like substantial form F and a passive principle P, where F and P have a Prearranged Diffusion Relation with one another. The theory assumes the Substantial Form Assumption, the Passive Principle Assumption, and the Prearranged Diffusion Relation.⁸⁵ During 1676, Leibniz confirms the general features of this account of substance and slightly expands upon some of these doctrines.

The texts of 1676 are often convoluted and sometimes contradictory. Within these personal notes, we witness Leibniz struggling with formulations and testing his ideas. There is a good deal of intellectual uncertainty. But behind this uncertainty looms the core metaphysics to which Leibniz constantly returns. As we will see, the essays of 1676 are strewn with evidence of the main doctrines of Leibniz's core metaphysics. The active things in the world are mind-like substances, which are "the true entities" and "which alone are one." The nature of created mind is to think or perceive and each mind is attached to some body.⁸⁶ That is, every mind "is indissolubly implanted in matter."⁸⁷ In one essay, Leibniz returns to the Aristotelian notion of an active intellect and defines God as "the primary

Leibniz was unsuccessful in finding support in Paris and was forced to leave the city for Hanover (via London and the Hague) on September 13.

84. I originally summarized my account of Leibniz's philosophy in the Paris period in the article, co-authored with Robert Sleigh, "Metaphysics: The Early Period to the *Discourse on Metaphysics*." After the completion of that piece, I discovered Leibniz's early Platonism, and have significantly altered my views about the pre-Paris period. This has led to a revision of the details of my account of the writings of 1676.

85. See Appendix II, chs. 7-9. 86. VI iii 510: Pk 61. See also VI iii 393: Pk 47.

87. VI iii 476: Pk 31. According to Leibniz, non-human substances exist from the creation of the world, and never cease to be. Human substances, on the other hand, are created by God in the course of the world, but then exist eternally.

intelligence, in so far as he is omniscient.” This same omniscience is “ascribed in a limited way to other things which are said to perceive something,” namely, to minds.⁸⁸ Leibniz also maintains that there are “infinitely many” perceptions of mind which “are not explicable in terms of each other,” but that follow from mind “as properties result from essence.”⁸⁹ He writes: “it can be shown that the mind is continually changed, with the exception of that in us which is divine or comes from outside. In sum, . . . there is something divine in mind, which is what Aristotle used to call the active intellect, and this is the same as the omniscience of God.”⁹⁰ In the *Studies on the universal characteristic* discussed in chapter 9, we identified a two-tiered explanatory hierarchy where the mind itself remained immutable while its qualities changed constantly. We find the same basic idea in the essays of 1676. According to Leibniz, it is important that this divine, omniscient element in mind comes “from the outside,” remains the same through its constant changes, and acts as the cause of those changes. Leibniz distinguishes between mind and its actions by noting that the former “remains always the same during change,” while the latter are discrete productions of the soul or mind.⁹¹

In 1676, Leibniz emphasizes the indestructibility of mind. He writes, for instance, “whatever acts cannot be destroyed,”⁹² nor “can [it] be dissolved naturally.”⁹³ But he goes beyond what he said in the pre-Paris texts. He offers a succinct explanation of his Platonist assumption in some notes that he took on Plato’s *Phaedo*. Embracing the view of Plato, he maintains that whatever “participates in life is not able to be distinguished.”⁹⁴ Leibniz also adds to his views about the unity and self-sufficiency of mind in interesting ways. First, he insists on the indivisibility of substantial unities where the idea is that for any mind-like substantial form F that organizes a passive principle P, the unity formed by F and P is indivisible. Although this claim follows from the Theory of Corporeal Substance, Leibniz insists in 1676 on the indivisibility of corporeal substance more thoroughly than he had in the earlier texts, especially in physical contexts. According to Leibniz, whatever has one mind will be indivisible: “there comes into existence a body which is one and unsplittable, i.e., an atom, of whatever size it may be, whenever it has a single mind.”⁹⁵ Mind acts as the “cement” of a substance, and thereby produces a “naturally indestructible” and indivisible atom.⁹⁶ We should not let the term *atom* mislead us. For Leibniz, an atom is indestructible and indivisible, but it is not invariable: that is, it is equivalent to the notion of a core of substance. As noted in chapter 8, section 3, the core of a substance S can be more or less expansive while remaining the same in-

88. VI iii 520: Pk 79. 89. VI iii 521: Pk 81. 90. VI iii 391: Pk 43.

91. VI iii 326. These comments appear in some notes that Leibniz made on Simon Foucher’s *Response*. For more about this text, see n. 123. See also VI iii 484: Pk 41.

92. VI iii 521. 93. VI iii 393. 94. VI iii 295.

95. VI iii 393: Pk 47. Also see VI iii 521: Pk 81.

96. VI iii 474–475: Pk 25–27. As this essay makes clear, in 1676 Leibniz was unclear about how to solve the problem of the continuum and related difficulties.

destructible thing. We saw that Leibniz developed a theory of diffusion to help explain how a substance could undergo radical transformations and yet remain the same thing. The notion of atom is equivalent to that of the core of substance: as long as S is organized by a mind F, S will remain the same thing, regardless of the variation in its passive principle. For Leibniz, the underlying assumption remains that the indivisibility and indestructibility of the unity of S follows from the divine-like persistence of its form. S will persist as long as F acts, as it always will, and as long as it is attached to its passive principle, which it always will be. Thus, each substance has a core that is indestructible as well as indivisible; in this sense, each substance is an atom, though a variable one.

In chapter 8, we witnessed the fact that Leibniz's notion of a core of substance, as first articulated in a letter to Johann Friedrich of May 1671, assumed the Diffusion Relation between the F and P in S. According to the Prearranged Diffusion Relation, although each of the subordinate substances in P acts out of its own nature, F emanates instructions for the activity of each of those substances. Moreover, the activity of F and of the substances in P is each a necessary condition and all are sufficient for any substantial feature *f* of S. In the texts of 1676, Leibniz remains committed to this relation. For example, in a short note of February 1676 entitled *On the seat of the soul*, he refers back to his discussion of resurrection "six years before" and reconfirms the views expressed in an addendum attached to his letter to Johann Friedrich of May 1671. In *On the seat of the soul*, he cites this earlier essay, *On the resurrection of the body*, and insists that he still agrees with "the Rabbis" that "there is a flower of substance diffused through the entire body, and in a sense contains form alone." Leibniz claims that the soul "is firmly planted in a flower of substance," which "subsists perpetually in all changes" and which can be "diffused" through the entire body or only some small part of it. Therefore, "in the same way that individual salts" become reconstituted after being dissolved in water, so "any human individual" can be reconstituted after death.⁹⁷ Like the earlier account, the explanation that Leibniz presents in *On the seat of the soul* of the radical transformations of death and resurrection applies with equal strength to the less dramatic transformations of a corporeal substance or substantial atom: the parts of the passive principle P in a substance S may come and go, but S will remain the same as long as the Diffusion Relation between the F in S and the dominant minds in P persists. That is, as long as the F in S continues to have a Diffusion Relation with the dominant minds in P, the variations in S are irrelevant to its identity and, moreover, constitute neither its destruction nor its divisibility.

But we need to say more. Leibniz's explanation of resurrection requires that P be constituted of a panorganic collection of substances which are themselves mind-like. According to the account of the Prearranged Diffu-

97. VI iii 478-79: Pk 33. For the essay on resurrection of May 1671, see II i 116-17. For my discussion of it, see ch. 8, sect. 3.

sion Relation given in section 3, chapter 8, the core of substance S contains the body of S in the sense that it contains the dominant minds of P, where the latter constitute the identity of P. Moreover, the passive principle or body of S is itself constituted of corporeal substances, each of which has its own body, and so on *in infinitum*. Is there evidence in early 1676 of such panorganismic vitalism? The textual evidence exists, although scant and obscure. Leibniz announces in *On the seat of the soul*, for example, that “the flower of substance is our body” and he mentions in passing that there are “bodies in a body.” In a related text, *On the secrets of the sublime*, also of February, he writes: “any part of matter, however small, contains an infinity of creatures, i.e., a world.”⁹⁸ In a short set of definitions composed at (roughly) the same time, Leibniz insists “that all things are animated.”⁹⁹ In *Notes on science and metaphysics* of March 1676, he is explicit about the close connection between panorganismic vitalism and the Diffusion Relation. According to Leibniz, “[m]atter in some way has its being from form” and each mind “has a certain relation to some portion of matter” so that “some body belongs to it” in the way that “every other” body does not.¹⁰⁰ In the conclusion to this essay, Leibniz insists: “there are as many minds, or little worlds, or perceptions, as there are vortices in the world” and so “no mind can be dissolved naturally.”¹⁰¹ In another essay written in the same month on a similar topic, Leibniz displays further evidence of both panorganismic vitalism and the Prearranged Diffusion Relation. In this short note, entitled *On the union of the soul and the body*, he makes some provocative remarks about soul-body union: “there is . . . an aetherial substance that diffuses the entire body and . . . through which the soul perceives.” Against those philosophers who claim that the diffusive power of the soul is due to its presence *in* the body, Leibniz argues that were the soul so diffused, then it would be in many places; but if it were in many places, then it would be divisible and would “have more than one action and passion” (say, one in one place and one in another place). Leibniz, of course, can accept no such consequences: “we do not act as a simple machine, but out of reflection, that is, out of action on ourselves.” Consistent with my account of the Prearranged Diffusion Relation, the mind-body union is based in reflection and action on oneself. That is, the relation between F and P is such that by acting on itself so as to produce its own thoughts, F acts in perfect prearranged harmony with P. As suggested in chapter 9, the Diffusion Relation between the active and passive principles in nature is modeled on that between God and mind: in the same way that the emanative power of God organizes and harmonizes created beings, so does the emanative power of F organize

98. VI iii 478–79: Pk 33; VI iii 474: Pk 25. About the latter claim, Leibniz says that “it is true, provided it is possible.”

99. VI iii 527: Pk 89. 100. VI iii 392: Pk 45.

101. VI iii 393: Pk 47. The notes in his *De summa rerum* are extremely helpful. It is a mark of Parkinson’s careful scholarship that he recognizes the connection between Leibniz’s comments about atom here and his use of “the flower of substance” in a related text. See 132, n. 6.

and harmonize P. Following this line of thought, Leibniz wonders at the end of *On the union of the soul and the body* whether or not the organization or “vortex” that our soul makes is like “the whole vortex of the great globe . . . vivified by a soul of the same kind” in which case “[t]he whole world is one vortex in God.”¹⁰²

This image of the world as a vortex in God is remarkable. Among other things, it offers a wonderful example of Leibniz’s erudition and conciliatory tendencies. What he does here is to turn an image, which is prominent in the writings of Athanasius Kircher, into something consistent with his own vortex account of cohesion. As noted in chapter 1, the young Leibniz was an admirer of Kircher. Leibniz mentions this well-known German Jesuit in *On the seat of the soul*, and in another essay of February 1676, he uses the same image to even greater effect. Kircher was fond of placing a picture in his books, at least one of which Leibniz knew,¹⁰³ portraying God as the center and the circumference of the cosmos. I will return to this point later. For now, it is important to emphasize the fact that when minds act, they act on themselves, and that the model for the relation between a mind and its body is the emanative relation between God and creatures. In other words, the relation between mind and body in the texts of 1676 is that of Prearranged Diffusion. Leibniz summarizes the point in December 1676:

The harmony of things requires that there should be in bodies beings that act on themselves [quae agerent in se ipsa]. On the nature of a being that acts on itself, it acts by the simplest means, for in that there is harmony. Once it has begun, it is eternal. There are ideas in it of those things it has perceived and done, as there are in God; the difference is that in God the ideas are of all things and are simultaneous. . . . Thought [cogitatio] or the perception of oneself, i.e., action on oneself, is necessarily continued.¹⁰⁴

Despite their uncertainty on a number of points, the essays of 1676 reveal an underlying commitment to the main features of Leibniz’s Theory of Corporeal Substance. In 1676, Leibniz persists in his belief that there is a core of substance which is fundamentally active, indivisible, and indestructible. Most important here is the idea that the goodness, self-sufficiency, and unity of God permeates the world to form clusters of beings which stand in prearranged harmony with one another.

Plenitude and minds: *On the secrets of the sublime*
or on the greatest of things

In February of 1671, Leibniz announces for the first time that he is committed to plenitude. In a fascinating note entitled *On the secrets of the sublime or on the greatest of things*, he proclaims: “After due consideration I take

102. VI iii 480: Pk 37.

103. See, e.g., the *Magneticum Naturae Regnum* of 1667 to which Leibniz refers in VI ii 295.

104. VI iii 588: Pk 113.

as a principle the Harmony of things, that is, that the greatest amount of essence that can exist does exist.”¹⁰⁵ In order to attribute as much goodness as possible to the universe, Leibniz assumes that essences are good, and then reasons that the more (compatible) essences in the world the better. It is important that he is not just after the greatest possible number of essences, he wants to make every positive aspect of the world as full as possible. He states: “It follows from this principle that there is no vacuum among forms; also that there is no vacuum in place and time. . . . From which it follows that there is no assignable time in which something did not exist, nor is there a place which is not full.”¹⁰⁶ In his characteristic fashion, Leibniz takes the traditional Principle of Harmonized Plenitude and molds it to fit contemporary issues in physics and mathematics. As I noted in chapter 5, section 3, the Platonist principle takes the goodness of the world to be a function of both the variety and order among the beings of the world. From the perspective of my interpretative story, it is noteworthy that Leibniz thinks of these assumptions as following from “the Harmony of things.” According to the interpretation offered in chapter 6, section 1, there are two aspects to Leibniz’s original understanding of harmony: the basic idea behind Emanative Harmony is that the Supreme Being emanates its essence to every creature and to the collection of creatures; the assumption behind the original version of Reflective Harmony is that (at least) some parts of the created world are in close relation with others, although by the time Leibniz left for Paris he had extended reflection to all creatures. Each of these aspects of harmony plays a role in his original attempt to articulate a theory of plenitude: he intends to fill the world with as many different creatures as possible and to relate them as thoroughly as he can.

As Leibniz struggled to articulate his theory of plenitude in the spring of 1676, he began to make more explicit (than he did in his pre-Paris essays)

105. VI iii 472: Pk 21–23. In an otherwise helpful article, O. Bradley Bassler offers a good example of some of the dangers in interpreting Leibniz without a broad enough textual, historical, and philosophical perspective. In his “Leibniz on Indefinite as Infinite,” Bassler assumes that the invention of the calculus “washed over Leibniz’s metaphysics with the force of a tidal wave” and generated “the metaphysical outpourings of 1676” (850–51). Bassler does not offer any evidence of the impact that the invention had on Leibniz’s metaphysics, so it is hard to evaluate the motivations of his claim. But a wide survey of the relevant texts makes clear that the various philosophical problems surrounding the calculus form a rather small subset of the many metaphysical topics that interested Leibniz at the time. Bassler also assumes that the analysis of one or two “motivating concerns” is sufficient to uncover what really interested Leibniz. Although Bassler rightly mentions Leibniz’s interest in the Cartesians during his Paris years, he ignores the equally important work done in the period on Plato. Finally, Bassler assumes that an unclarity on Leibniz’s part about how to solve one problem implies an unclarity on other topics. Although Bassler is right to note that in *On the secrets of the sublime and on the greatest of things*, Leibniz’s conclusions about the indefinite are unclear, such indefiniteness does not justify the claim that Leibniz’s metaphysics in 1676 is in “radical flux” (851). As the title of Leibniz’s essay suggests, the text focuses on a set of related “sublime” matters, which (as we will see) reveal central features of the core metaphysics.

106. VI iii 473: Pk 23.

his underlying beliefs about Emanative and Reflective Harmony. There were three underlying assumptions, each of which we discerned in the texts of 1671. First, he asserts that all minds are eternal and that each mirrors the entirety of the created world. Second, in March and April, he develops his doctrine of traces as a means to increase worldly variety and unity. Third, in April, he offers his first explicit argument for the Principle of the Identity of Indiscernibles. In the subsections that follow, I will discuss the second and third of these developments in Leibniz's thinking about plenitude. For now, it will be worth analyzing the relevant parts of *On the secrets of the sublime or on the greatest of things*. Because the essay is Leibniz's original attempt to string together his fundamental assumptions about harmony and plenitude, there is much to be learned from some of its details.

That Leibniz is trying out new combinations of ideas is clear from the tentative language of the text. Throughout the essay, he begins sentences with phrases like "It seems" and "Perhaps it follows." He often proclaims: "One must see if this inference is valid" and "One must see if this really follows." What is most relevant here, however, is the exclamation: "One must see, therefore, what follows from the plenitude of the world."¹⁰⁷ At the center of the essay stands the following paragraph, which functions as a summary of Leibniz's views about God's relation to the world and acts as an introduction to a lengthy discussion about the plenitude and harmony of creatures. The passage contains evidence of panorganic vitalism, a vortex theory of physical cohesion, Emanative and Reflective Harmony, Complete-*Ratio* Phenomenalism, and the mirroring of minds. For our purposes, it is significant that in February 1676 all these doctrines are closely linked in Leibniz's thought. He writes:

It seems that there is some center of the entire universe, and some general infinite vortex; also some most perfect mind, or God. This mind, like a soul, exists as a whole in the whole body, of the World; the existence of things is certainly due to this mind. It is the cause of itself. Existence is nothing other than that which is the cause of consistent perceptions. The *ratio* of things is the aggregate of all the requisites of things. God comes from God. The whole infinite is one. Particular minds exist, in short, simply because the highest Being judges it harmonious that there should exist somewhere what understands, or is a certain intellectual mirror, or replica of the World. To exist is nothing other than to be Harmonious; the mark of existence is consistent perceptions.¹⁰⁸

This passage is remarkable in a number of ways, not the least of which is its obscurity. Although its details are difficult, it will be worthwhile to work through them.

The passage begins with a striking use of Kircher's image of God as the center of the cosmic circle. Given the thrust of the rest of Leibniz's passage, it is noteworthy that Kircher's image was often interpreted as conveying the harmony and interconnectedness of things and was not taken to imply pantheism or anything like it. For example, according to Sor Juana Inés

107. VI iii 473-74; Pk 25. 108. VI iii 474; Pk 25.

de la Cruz, a Mexican nun and contemporary of Leibniz, Kircher's image shows that "all things proceed from God, who is at once the center and the circumference from which all existing lines proceed and at which all end up." That is, for Sor Juana, Kircher's point is that God so put things "in place that they appear correlated and bound together with marvelous concert and bonding . . . so that all things were strung and linked together."¹⁰⁹ Although Leibniz changes the image so that it conforms to his vortex theory of cohesion, he uses it to set the context for what follows. In order to feel the full weight of the image as employed here, we need to return to Leibniz's vitalism and to another text of February 1676, namely, *On the union of soul and body*. In this essay, Leibniz uses the image to suggest that in the same way the emanative power of God organizes and harmonizes created beings, so does the emanative power of mind organize and harmonize its body. According to Leibniz's theory of the World Soul articulated in section 3 of chapter 7, the Supreme Being fills the world with its "Spirit," which is then organized into vitalistic beings. What Leibniz does in 1676 is to combine his *Metaphysics of Divinity* and his physical theory: the Supreme Being unifies the world by emanating its divine oneness and power in the same way that every mind-like form unifies its passive principle. Each of the vortices in the world can be seen as a part of a universal vortex created and maintained by God. Leibniz writes: "The whole world is one vortex for God."¹¹⁰ Within this context, Leibniz's claim that the divine "mind, like a soul, exists . . . in the whole body, of the world," suggests that the divine mind emanates its perfect vitality out of which the individual creatures are made. The suggestion is also that the unity produced by the activities of individual minds is modeled on that of God. That is, for each corporeal substance S, the unity and being of S is ultimately rooted in the mind-like F in S just as the unity and being of the world is rooted in God. "The *ratio* of things is the aggregate of all the requisites of things" in the sense that God is the *ratio* of each F, which itself contains the aggregate of the requisites of the states of S.

So far, so good. But the claim that "God comes from God" looks frightfully unorthodox. What are we to think? Following the Theory of Emanative Causation and the Creaturely Inferiority Complex, God is both transcendent from and immanent in the world. As explained in chapter 5, section 4, the creatures exist in the Supreme Being in the sense that their entire being depends on that transcendent source, while the Supreme Being exists in the creatures in the sense that each creature is a more or less clear instantiation of the divine essence. In this interpretative context, it need not be heretical to declare either that the perfect mind "is the cause

109. Sor Juana Inés de la Cruz, *A Sor Juana Anthology*, 218. It is significant that a Catholic nun like Sor Juana did not find Kircher's image controversial. While it might strike us as pantheistic and heretical, neither the Catholic church nor Kircher's many contemporary admirers seem to have found it problematic.

110. VI iii 480: Pk 37. cf. Wilson, *Leibniz's Metaphysics*, 34.

of itself” or that “God comes from God.”¹¹¹ Moreover, in related texts, Leibniz makes the same point in more orthodox terminology. For example, he writes in March: “God does not form part of things, rather, he is their principle.”¹¹² But, insofar as God is their principle, the supreme essence is immanent in the world. According to Emanative Harmony, the Supreme Being is both the variety and the unity in the world. Thus, Leibniz writes: “The whole infinite is one.” Once we place the quoted passage against the Platonist background set in the previous chapters, it can be seen as a subtle play on the relation between God as transcendent from the world and as immanent in it. Leibniz’s vision here is stunning: the world is a vortex of vitalistic minds, emanating from God and interrelated through perception and harmony.

In section 3, I will argue that Leibniz’s comments about existence in this and related texts imply Complete-*Ratio* Phenomenalism. For now, the point to emphasize is that he is explicit here for the first time that the harmony of the world will be increased just in case minds act as a “replica of the World.” In his use of the mind as a mirror in 1671, mirroring was considered good because it aided in the moral development of rational minds. In February 1676, the benefit of the mirroring of minds has greatly increased. But how exactly does the mirroring of minds increase the goodness of the world? Leibniz continues: if “it is possible,” then “it is true that any part of matter, however small, contains an infinity of creatures, or is a World, . . . for it increases the multiplicity of existing things and the harmony of things, or the *admiration* of the divine wisdom.”¹¹³ He is explicit here about the fact that the harmony of the world will be increased by the existence of creatures who are capable of admiring the divine wisdom.

Nor is that all. For the first time, Leibniz proclaims in *On the secrets of the sublime or on the greatest of things* that minds are eternal. One of the more striking facts about the subtle changes in his views during the Paris period is that without any fanfare, he replaces the momentary minds of the pre-Paris years with eternal ones. According to Leibniz in February 1676, “every mind is of endless duration” and “is indissolubly implanted in matter. . . . There are innumerable minds everywhere” which “do not perish.”¹¹⁴ But this is curious. It is one thing for minds to be indestructible and quite another for them to be eternal: the constant activity of minds guarantees the natural indestructibility of substances, but it does not by itself guarantee their eternity. Once created, such substances will persist forever only if God deems their survival harmonious. But how exactly is the eternity of

111. Lest someone think that Leibniz intends to equate God with nature, it is worth pointing out that a few lines later he insists that God is “a certain substance, a person, a mind” and is neither “nature” nor “the World” nor “in a place” nor in any way material. Rather, he insists: “God is an intelligent substance.” VI iii 475: Pk 27. Furthermore, in an essay of April, Leibniz argues against the idea that there is a single soul in the universe, and concludes that “there is no soul of the universe.” See VI iii 521: Pk 81.

112. VI iii 392: Pk 45

113. VI iii 474: Pk 25; my emphasis. Also see VI iii 588: Pk 113.

114. VI iii 476–77: Pk 31.

substances supposed to *increase* harmony? For example, if God were to replace one infinite set of substances with a new one (say, one every millenium), would the universe not be rendered fuller? In *On the secrets of the sublime or on the greatest of things*, Leibniz justifies his new position: "A most perfect being is that which *contains the most*. Such a being is capable of ideas and thoughts, *for this multiplies the varieties of things*, like a mirror."¹¹⁵ I argued in chapter 8 that in the texts of 1671, minds perceive harmony; and in chapter 6, I described the role of the image of a mirror in Leibniz's account of the ethical development of human beings.¹¹⁶ By February 1676, Leibniz has recognized that he can greatly increase the plenitude of the world by turning all minds into eternally perceiving things and by making each individual mind reflect or mirror every state of every other substance. According to Leibniz: "There are beautiful discoveries and ingenious images with regard to the harmony of things."¹¹⁷ For the first time, Leibniz applies the image of the mind as a mirror to all created minds and thereby increases both the variety and unity in the world. The fact that each mind reflects or mirrors all the others allows Leibniz to go beyond the maximization of objects to that of their images and ideas. By giving each indestructible mind at every moment of its eternal existence a perception of the entire world, not only does each created thing instantiate the (selected) divine essence, it reflects all the other instantiations and thereby increases the variety of things. By the same means, Leibniz also heightens the unity of things: not only are created things in perfect correspondence with one another, each mirrors all the others and thereby increases the Reflective Harmony and unity among them.

Finally, in *On the secrets of the sublime or on the greatest of things*, Leibniz presents some important clues about how created minds work. In language very similar to that used in the writings of 1671, he claims that "God is a person or [seu] an intelligent substance"¹¹⁸ who "arranged all things from the beginning,"¹¹⁹ where the suggestion is that this arrangement consists in giving each mind a Production Rule for the continuous production of its thoughts. In chapter 9, I argued that each created mind produces all its own thoughts and hence all its states, both active and passive. In February 1676, Leibniz applies the same model of thinking to God. He writes about God: "It must be demonstrated rigorously that he perceives himself acting on himself, for nothing is more admirable than for the same being to perceive and to be acted on [pati] by itself."¹²⁰ As a conclusion to his discussion of harmony and "the mutual influence" of things which "understand their

115. VI iii 475: Pk 29; my emphasis.

116. Although there is, to my knowledge, no textual evidence to this effect, it is at least possible that Leibniz was motivated to attribute perception to the mind-like substantial forms in bodies because he saw the need to attribute sympathy to all substances. As noted in sect. 1, by 1672, sympathy had become a means to explain cohesion in the parts of bodies.

117. VI iii 476: Pk 29. 118. VI iii 475: Pk 27.

119. VI iii 477: Pk 31. 120. VI iii 475: Pk 27.

duty and communicate with God," Leibniz makes a delightfully honest comment. In a touching display of optimistic exuberance, he exclaims:

Whoever understands these things correctly cannot fail to be happy and content, trusting God and loving God, whatever the evils into which he falls. I know no one happier than I am, because God gave me this understanding, as a result of which I envy no king; I am certain that God takes special care of me, that is, that he has destined my mind for immense joys, in that he has opened to me such a certain and easy way of happiness. Nor is there any need of miracles to explain the grace of God. . . . For God arranged all things from the beginning in this way.¹²¹

Plenitude and traces

In the winter of 1675-76, Leibniz took notes on a number of important texts. These include Spinoza's *Tractatus Theologico-Politicus*, Plato's *Phaedo* and *Theaetetus*, Descartes' *Principles of Philosophy*, and Boyle's *The Excellence of Theology*.¹²² Among the writings of his well-known contemporaries, the one that probably had the greatest immediate influence on his evolving ideas was the *Response* written by Simon Foucher to Malebranche's *The Search for Truth*. In his notes, Leibniz makes some remarks that are particularly relevant here. He writes: "The author says that traces [les traces] are necessary for us to conserve a memory of things. But this does not seem so certain to me." Leibniz gives two reasons for his doubt. The first displays his concern for conciliation: "[t]hose who ascribe memory to the separate soul will not agree to it." The second is more complicated. He asks: "[b]y what trace does the soul remember that it has been and has thought?"¹²³ As we will see, it was Leibniz's firm opinion that we are continuously aware of ourselves thinking. According to his reading of Foucher, the conservation of the memory of a thing was to be explained by a trace in the mind. For Leibniz, the problem with Foucher's theory was due to the fact that since the mind or soul cannot be changed in any way, the theory of traces cannot be used to explain the memory that we have of ourselves thinking. As Leibniz adds a bit later in his notes: "The author is right in saying that thought is not the essence of the soul, for a thought is an act, and since one thought succeeds another, that which remains instead during this change must necessarily be the essence of the soul, since it remains always the same."¹²⁴

121. VI iii 477: Pk 31. 122. See VI iii 213-311.

123. VI iii 319: L 155. For Foucher's views, see *Réponse pour la critique à la préface du second volume de la recherche de la vérité*, 55-56. Loemker notes the relationship between Leibniz and Foucher.

124. VI iii 326: L 155. Many years later, Leibniz added the following comment: "The essence of substances consists in the primitive force of action, or in the law of the sequence of changes, as the nature of the series consists in the numbers." I take this comment as evidence of the fact that Leibniz's Theory of Substance in 1676 attributes a production rule to mind and, moreover, that the latter is very similar to "the law of sequence" which he uses to such effect in the 1690s and which assumes the complete concept theory of substance.

But Leibniz was attracted by Foucher's theory and set about solving the problem. Within weeks of taking notes on the *Response*, he had incorporated Foucher's notion of traces into his account of substance. The steps he took are unusually easy to discern. In his *Notes on science and metaphysics* of March 1676, he reveals that he is very tempted by Foucher's basic idea. According to Leibniz, each mind "perceives all the endeavors" or activities of all the other substances and "no endeavor in the universe is lost; they are stored up in the mind, not destroyed."¹²⁵ He is undecided about how to explain this feature of mind, and ends this essay with a query about memory. However, by the time he composed the essay entitled *On truths, mind, God, and the universe*, he has resolved that when a mind F perceives itself, its object is a different *kind* of thing than are the objects it perceives when it perceives particular states. According to Leibniz in this note of April 15, when an individual mind perceives itself thinking, it perceives its essence as a thinking thing; when it perceives its individual states, it is perceiving its states or modes. He argues:

In our mind there is a perception or sense of itself. . . . This is always in us. . . . Therefore, intellectual memory consists in this: not what we have perceived, but that we have perceived, that we are those who have perceived. This is what is commonly called 'the same;' this faculty in us is independent from external things. . . . This particular sense of oneself is without characteristics. . . . It seems that this sense of oneself always exists. Since this is the nature of the mind and it consists in the sense of itself, then I do not see how that sense can be impeded or destroyed. Furthermore, . . . the identity of the mind is not destroyed by some modification.¹²⁶

If we take the "faculty" here to be the divine-like emanative power in each individual mind, then the point is that when the mind reflects on itself, it perceives its nature without any particular state or modification. The memory that we have of this nature is not the memory of a particular state or thought; rather, it is the memory of the awareness of ourselves as the persistent thinking things that we are. Leibniz suggests that this memory is significantly different from the memory that we have of particular states or modifications. About the latter, he explains that each mind "as something particular" is "endowed with certain modifications; moreover, a mind perceives each of its modifications as a this or a that."¹²⁷ In sum, for each individual mind F, F has direct awareness of itself as the thinking thing that it is, and this "intellectual memory" constitutes part of what it is to be F. For Leibniz here, the nature and identity of F is somehow bound up with this memory that F has of itself. However, the memory that F has of its particular states is different in kind from the one that it has of itself because (among other things) the states are constantly changing. In another essay of April entitled *On reminiscence and on the mind's self-reflection*, Leibniz announces, without explanation or elaboration: "To me, it seems that there is

125. VI iii 393; Pk 47. 126. VI iii 509; Pk 59–61.

127. VI iii 509; Pk 61. The language that Leibniz uses here is similar to that used in notes on Plato's *Theaetetus*. See VI iii 304–05.

some memory per se of ourselves and of perception, but not of varied perception."¹²⁸ Although Leibniz does not talk about traces here, it would seem to follow that while traces are required for the memory that F has of a state or modification, they are not required for the memory F has of itself. Leibniz summarizes his new position in *On truths, mind, God, and the universe*: "It is not credible that the effect of any perception should vanish in the future, since the effect of the actions of all the others endures forever."¹²⁹ The point seems to be that in the same way that each mind retains the effect of the actions of every other substance in the world, so it retains the effect of its own actions.

As we have noted, in *Notes on science and metaphysics* of March, Leibniz claimed that "no endeavor in the universe is lost; they are stored up in the mind." In *On truths, mind, God, and the universe* of April 15, he implies a distinction between intellectual memory and the memory of particular states, and he concludes that we must retain the effects of the latter. His conclusion is that the perceptions of a mind are cumulative in the sense that every new state of F contains "the effect" of all the previous ones. That Leibniz takes himself to have constructed a solution to the problem that faced Foucher's theory is clear. By the time Leibniz composed *On forms or the attributes of God* in the second half of April, he has adopted Foucher's term. According to Leibniz there, "it is true that there is no memory without traces."¹³⁰

Plenitude and distinctness: *Meditation on the principle
of the individual*

According to the Platonist Principle of Harmonized Plenitude, variety among beings increases the goodness of the world. As noted in chapter 6, section 3, Leibniz's texts of the late 1660s already contain evidence that each substance differs from every other. Given Emanative Harmony, it seems obvious that the distinctness of minds would greatly increase the goodness of the world. By the spring of 1676, Leibniz is prepared to expand upon this idea and to explain exactly how the distinctness of mind is related to plenitude. In an essay of April 1, Leibniz offers his first argument for the Principle of the Identity of Indiscernibles. As a proper introduction to this argument, it will be helpful to note an epistemological asymmetry in the relation between a cause and its effect in Leibniz's original Aristotelian assumptions.

The notion of complete *ratio* maintains that the understanding of a cause entails full knowledge of its effect: one sees exactly why the effect and no other occurred. In the essay entitled *Demonstration of first propositions*,

128. VI iii 516: Pk 71. For an interesting account of some of Leibniz's early views about memory and its relation to his account of the action of the mind on itself, see Kulstad, *Leibniz on Apperception, Consciousness, and Reflection*, 62-66.

129. VI iii 510: Pk 61. 130. VI iii 514: Pk 69.

which dates from the winter of 1671–72 and which contains the first demonstration of the Principle of Sufficient Reason, Leibniz’s comments suggest that from a full knowledge of the cause, an understanding of the effect would result. However, the essay is silent about what the effect might tell us about the cause. That is, the Aristotelian assumptions imply nothing about any entailment from effect to cause. Since the Intelligibility Assumption implies that a feature *f* of a substance *S* is rendered intelligible (at least in theory) by a consideration of *S*’s nature, one would think that a full understanding of *f* requires that one know enough about *S* to see exactly how *S* caused *f*. In other words, the Aristotelian assumptions lead us to expect that a thorough understanding of *f* would involve *S* in fairly significant ways. Moreover, according to the Theory of Emanative Causation, for a being *A* that is more perfect than a being *B*, *A* can emanate its attribute *f*-ness to *B* in such a way that neither *A* nor *A*’s *f*-ness is depleted in any way, while *B* has *f*-ness, though in a manner inferior to the way it exists in *A*. Many Platonists understood the theory to entail that knowledge of *B* would lead to knowledge of *A*. Given that both the Aristotelian and the Platonist assumptions seem to assume an epistemological symmetry between a cause and its effect, it is odd that Leibniz’s writings before 1676 are nearly silent about the relation.¹³¹

This awkward silence is broken on April 1, 1676, when in the essay *Meditation on the principle of the individual*, Leibniz first begins to claim that “[a]n effect is conceived through its cause.”¹³² Nor should his sudden interest in the epistemological connection between an effect and its cause come as a surprise: the conjunction of his new notion of traces, the Theory of Corporeal Substance, and the Logical and Intelligibility Assumptions yields the view that for any state *f* of *S*, a thorough knowledge of *f* would lead to an understanding of *S*. A major part of the essay is an argument for just this sort of relation between a substantial state and its cause. But before turning to the details of the argument, it will be helpful to present a further motivation for Leibniz’s revised account of a substantial state. In the essay *On truths, mind, God, and the universe*, we find a theological reason for the revision: in order to assure that the soul retains its identity after death, it must contain at every moment of its existence the entirety of its past. In this essay of April 15, Leibniz reasons as follows:

It is credible that the person who dies content, remains content. It is my view that all true entities or minds, which alone are one, always increase in perfection . . . ; that [at death] minds will for a while be withdrawn within themselves and will perhaps at some time return to a perception of external things. . . . So, I do not accept the view of Spinoza, that the individual mind is extinguished with the body; that the

131. Leibniz’s discussion in 1671 about the difference between what is prior in time and prior in nature is roughly a discussion about this topic. See my account of this distinction in ch. 8, sect. 2. For a summary of the principles and assumptions mentioned here, see Appendix II, chs. 2, 5, and 8.

132. VI iii 490: Pk 51.

mind in no way remembers what has gone before; that there remains only that which is eternal in the mind, namely, the Idea or the essence of the body.¹³³

At the time of the death of a person S, the passive principle of S is radically altered while the mind F in S persists.¹³⁴ Since without its body, F cannot perceive the world, F will remain in something like a condition of stasis until resurrection. We also find in this passage (what is probably) Leibniz's original statement of the remarkable idea that all the minds in the world increase in perfection. His primary concern here is to explain how each mind is able to retain its identity at death. The assumption seems to be that because substantial identity is determined by the condition of the soul at death and because the essence of each soul is fundamentally the same (what I have taken to be a mind-like emanative power), it is necessary that every state of the soul contains its entire history. Leibniz goes on to explain exactly how the perfectibility of minds requires this account of a substantial state. He argues that if what survives death is merely some "perfect essence," then "it will not be remembered, nor will we have any perception of it, and we labor in vain to perfect our mind on behalf of its state after death." But in this case, "one labors at the perfection of one's mind in vain. My view, on the contrary, is that it is rational that the perfection of the mind should not be sought in vain."¹³⁵ For Leibniz, in order to justify the moral development of human beings and explain the perfectibility of minds, it is reasonable to assume that every state of mind retains traces of its entire history.

But let's be perfectly clear about what Leibniz's position involves. According to the texts of 1671, for every mind-like substantial form F there is a Production Rule such that the necessary and sufficient conditions for each state of F consists in the conjunction of the principle of activity in F, its Production Rule, and its previous state. Because the Production Rule contains instructions for what F will do, it would seem to follow that it contains what the mature Leibniz will call "the marks" of F. But it also would seem to follow from the notion of a Production Rule that F contains evidence of its history in the sense that it contains the Production Rule, which has told it *how* to act throughout its existence. What exactly is the difference between the earlier view and the position in 1676? In the spring of 1676, by giving each mind traces of its past, Leibniz allows each mind the *means* to mem-

133. VI iii 510: Pk 61. In the *Philosopher's confession*, Leibniz seems to assume that the thoughts that a person has at death determine the nature of the person's afterlife. The basic idea is that when someone dies loving God, salvation is (at least) likely, whereas, when someone dies hating God, damnation is bound to follow. See VI iii 119, 138f.

134. Although it is possible that Leibniz has radically changed his views about corporeal substance, this seems unlikely. Since immediately before and immediately after the composition of this essay, he endorses both the Passive Principle Assumption and the doctrine of a core of substance, it seems likely that when he writes here that "the body is extinguished," he does not mean that the core of the substance has changed, but only that it has shrunk down to some small part of its original body. For the details of how this is supposed to work, see ch. 7, sect. 4 and ch. 8, sect. 3.

135. VI iii 510: Pk 63.

ory and knowledge of its past states. And once each mind, at every moment of its existence, has the means to its past, it is both capable of retaining its identity after death and is such that every one of its states contains traces of its nature.

Leibniz begins the *Meditation on the principle of the individual* as follows: “We say that the effect involves its cause; that is, in such a way that whoever understands some effect perfectly will also arrive at knowledge of its cause. For it is necessary that there is a certain connection between a complete cause and the effect.”¹³⁶ He then poses an apparent counter-example to this theory: in some cases “different causes can produce an effect that is perfectly the same.” His immediate response to this problem is important. He denies that there could ever be such a case, and claims that “we are certain, from some other source, that the effect does involve its cause,” and therefore that “it is necessary that the method of production must always be discernible” in the effect.¹³⁷ It is “impossible” that two effects could be perfectly similar “for they will consist of matter” that “will have a mind” such that “the mind will retain the effect of its former state.” He does not explain what this “other source” of certainty is, but attempts to demonstrate his claim by means of a *reductio ad absurdum*. He argues that if any two individuals were perfectly similar, three unacceptable conclusions would result: “the effect would not involve its cause;” “the principle of individuation” would be “outside the thing, in its cause;” and “one individual would not differ from another in itself.” It is important that Leibniz does not feel the need to explain why these results are absurd. He seems to take their untenability to be obvious. And of course they are obvious given his *Metaphysics of Substance*. In general terms, the absurdity of all three claims follows from Leibniz’s Aristotelian assumptions about cause and substance. As we have seen, from the beginning of his philosophical career, Leibniz assumes an intimate relation between a cause and effect and between a substance and its features. More specifically, the notion of a Production Rule implies the falsity of the conclusions: because the rule makes each substance distinct from every other, the principle of individuation of the substance would have to be in the thing itself; because Emanative Harmony insists that no two rules be the same, it follows that no two individuals will be the same either.

So far so good. But how exactly does the effect involve its cause? In his explanation of this point, Leibniz admits that the position follows from the fact that each state *f* of a mind *F* contains traces of all the previous states of *F*:

136. VI iii 490: Pk 51. The interpretation that I present here of this essay differs slightly from the one offered in “*Metaphysics: The Early Period to the Discourse on Metaphysics*,” co-authored with Robert Sleigh. See esp. 103–05.

137. *Ibid.* Notice the relation between this argument and Leibniz’s point about the clock. For my discussion of the latter, see ch. 8, sect. 1. I assume that Leibniz’s claim here would not be true of aggregates of substances since an aggregate is not strictly an individual thing. For a discussion of a related point about aggregates, see sect. 4.

But if we admit that two different things always differ in themselves in some respect as well, it follows that there is present in any matter something that retains the effect of what precedes it, namely, a mind. And from this it is also proved that the effect involves the cause. For it is true of it that it was produced by such a cause; therefore right up to the present there is in it a quality of such a kind as to bring this about, and this quality . . . has about it something that is real. It is evident what great consequences follow from such little premises.¹³⁸

Before we can understand exactly how great these consequences are, we need to articulate an implicit assumption in the these "little premises." In particular, we need to grasp exactly how the mind is related to the matter such that the mind "retains the effect of what precedes it." The passage asserts that the mind has a quality that is real and that somehow brings this matter about. Although Leibniz does not give details in the *Meditation on the principle of the individual*, the counter-example that he presents to the claim that an effect involves its cause offers some help. Leibniz presents a square figure and explains that "whether two parallelograms or two triangles are put together, . . . the same square will . . . be produced." By such means, Leibniz seems to present the rectangle as an intentional object. That is, the matter under discussion in the essay is the phenomenal object that belongs to a thinking mind, where the latter is its cause. In other words, the essay assumes Complete-*Ratio* Phenomenalism. If we assume that the matter under discussion in the quoted passage is the phenomenal object perceived by the mind, then this part of Leibniz's argument in *Meditation on the principle of the individual* goes through neatly. Once we take the matter under discussion to be a substantial state *f* of a mind *F* and once we recognize that each state of *F* contains traces of all it has done, it follows that to understand *f* is to understand *F*. In brief, the effect involves its cause in this case because, for any state or effect *f* of a mind *F*, *f* is caused by *F* and moreover *f* "retains the effect of what precedes it." One of the "great consequences" of Leibniz's essay is that each substantial state reveals the entire nature of the substance. As Leibniz concludes his argument: "This argument is very fine, and proves that matter is not homogenous and that we cannot truly think of anything by which it differs, except the mind."

But how exactly is all this related to plenitude? It follows from the argument in *Meditation on the principle of the individual* that every state of every substance contains the entire world, past, present, and future. But this perceptual fecundity requires that each substance be distinctive: in order to maximize the variety of perceptions, each substance must perceive the world from a perspective that is different from every other. This means that no two perspectives will be similar, and hence that no two substantial states will be the same. The Principle of the Identity of Indiscernibles constitutes one

138. VI iii 491: Pk 51. A prominent claim in *First truths* is that "there are no extrinsic denominations." See Appendix I. Although Leibniz does not develop this terminology until later, the claim is roughly the same as the one made here.

of the fundamental assumptions of the essay. But *Meditation on the principle of the individual* also implies that for Leibniz in 1676, the relation between a substance and each of its states or products is like that between the Supreme Being and each one of its creatures or products: from a full understanding of the one, we can attain a complete understanding of the other. By constructing an epistemological symmetry between an effect and its cause, Leibniz has made the world such that a full understanding of any state of any substance is tantamount to knowledge of the divine nature. In a striking passage written in the first few months of 1676, Leibniz returns to the image of a town to summarize his new position:

It seems to me that every mind is omniscient in a confused way. . . . And so in this way a wonderful variety arises, for there are as many different relations of things to the universe as there are minds, just as when the same town is seen from various places. So God, by the creation of many Minds, willed to bring about with respect to the universe what is willed with respect to a large town by a painter, who wants to display delineations of its various aspects or projections. The painter does on canvas what God does on the mind.¹³⁹

Leibniz's account of mind and perception in the first half of 1676 has much in common with a major part of the *Metaphysics of Divinity* as described in chapters 6 and 8. According to the *Emanative Creation Story* articulated in chapter 6, the Supreme Being emanates its (selected) divine essence to every substance which is thereby an instantiation of that essence. Each substance contains the divine essence but in a different way from every other. In chapter 8, section 3, I discussed an essay written in the second half of 1671 in which Leibniz displays for the first time a complete account of thinking. In *On endeavor and motion, perceiving and thinking*, what Leibniz adds to the *Emanative Creation Story* is that the thoughts and perceptions of a mind F emanate from its nature which itself is an emanation of God. More specifically, each of the thoughts of a perceiving mind F is the result of F's emanating its divine essence in a manner consistent with its Production Rule. Because God is the ultimate cause of the thoughts and perceptions, the perceptions contain their divine source. Although each mind perceives its own version of harmony, each is perfectly coordinated with the others. For Leibniz in 1671, reality is an infinity of perfectly coordinated perspectives on the divine nature.

By the spring of 1676, Leibniz has added significantly to the grandeur of this picture. By making each mind eternal and by giving every mind at every moment of its external existence traces of the entire history of the world, Leibniz has turned every state of every creature into a "delineation" and "projection" of the being and goodness of God. With wonderful aplomb, Leibniz thereby increases the plenitude and harmony of creation: each thought of every mind has been constructed so that it contains the world and the means to knowledge of its divine source.

139. VI iii 524; Pk 85.

It will be helpful to include these additions in the Substantial Form Assumption. The revised version is:

- The (1676) *Substantial Form Assumption* claims that, for every mind-like substantial form F in a corporeal substance S, F acts constantly through emanation and therefore can neither be created nor destroyed by anything other than God; F contains the (selected) divine essence and a Production Rule where the latter specifies how F will emanate the former and therefore contains marks of everything F will do; F emanates its states, which are its thoughts, which change constantly, which are the ontological correlates of the predicates in the complete concept of S, and which are a more or less clear instantiation of the (selected) divine essence; F is permanently rooted in its passive principle P with which it forms a core of substance, where the relation between F and P is one of Prearranged Diffusion and where the unity is indissoluble; F is eternal, differs from every other mind in the world, and mirrors all the others; and each state of F contains traces of all its previous states and is such that an understanding of it will lead to knowledge of its cause.

3. Substance and divinity, 1676

In chapter 6, I displayed Leibniz's conception of God as the emanative source of the world, each of whose creatures instantiate the (selected) divine essence. In chapters 8 and 9, I described his first attempts to explain the preestablished interrelations among substances, according to which each creature instantiates the divine essence from its own perspective in perfect harmony with every other. Although many of the passages discussed in the previous section contain evidence of these doctrines, it will be helpful to explore some of these texts in greater detail here. Given the intensity of his interest in metaphysical matters in early 1676, it is not surprising that Leibniz attempts to clarify his views on these central topics. The results of his ruminations are more careful articulations of some of the doctrines of his core metaphysics.

Emanative Harmony

In April 1676, Leibniz criticizes Descartes because the latter “did not take his analysis to the most profound things or [seu] the primary forms, that is, he did not begin with God.”¹⁴⁰ Leibniz does not intend to make the same mistake. In the notes composed in March and April, he is especially keen to analyze precisely the relation between God and creatures and to formulate what he considered an original version of the ontological argument.¹⁴¹ Placing himself squarely within a long line of Platonists, he de-

140. VI iii 508: Pk 57.

141. For a discussion of Leibniz's version of the argument, see Adams, *Leibniz*, esp. ch. 5. Al-

finest the divine mind as what contains the Platonic Ideas. According to Leibniz, God is “the subject of all absolute simple forms – absolute, that is affirmative.”¹⁴² ‘Form’ here refers to a Platonic Idea or essence, so that God contains all positive essences. Thus, God can be thought of as “the conjunction in the same subject of all possible absolute forms or perfections.” In the spring of 1676, Leibniz is explicit about the fact that God contains an infinity of such Ideas or forms.

According to part (1) of the Emanative Creation Story, the Supreme Being chooses one among an infinity of versions of the divine essence and emanates that (selected) divine essence to each individual creature in the world so that each creature contains fundamentally the same essence. According to part (5) of the story, each substance is different from every other. Following the analysis of emanation in chapters 6, 8, and 9, this means that each substance instantiates the (selected) divine essence in a way different from every other, where the Production Rule specifies exactly how that instantiation will occur and where the difference is partly a function of the clarity of the instantiation of the essence. For help with this idea, in chapter 6 I compared the (selected) divine essence to a story and each individual instantiation of the (selected) essence to a translation of the story. Following this analogy, each substance is like a translation of the story in that although it differs from all other substances, it is an expression of the same thing. Once the notion of a Production Rule was introduced in chapter 8, I extended the analogy and compared the rule in F to the rules of the language into which the story will be translated. In this case, the nature of F is like the (selected) story, its Production Rule is like the rules of the language, and the thoughts of F are like the sequence of translated sentences which result from applying the rules of the language to the story. I noted the importance of the fact that the thoughts of F change although F remains the unchanging emanative source of them. Finally, with the introduction in chapter 9 of the idea that substances and their states differ according to the clarity of their instantiation of the divine essence, the analogy was employed to make sense of the fact that like different translations of a story, substances can differ dramatically in the clarity of their expression.

The essays of the spring of 1676 are thoroughly consistent with this account. In fact, Leibniz is fairly explicit about the relation between the divine essence and the individual instantiations of it in the world. But before turning to the details of the texts, it will be helpful to identify a subtle difference between the two images that Leibniz commonly uses to describe the relation between the divine essence and its products. Throughout 1676, Leibniz relies on two distinct analogies. One is arithmetical, where the essence of a number, say 6, is compared to God and the various expressions of that

though much of Adams’ discussion of Leibniz’s philosophical theology is quite helpful, there is no acknowledgement of Leibniz’s Platonism and, therefore, the entire analysis is based on an inadequate understanding of Leibniz’s notion of God.

142. VI iii 520: Pk 79.

essence, say $3 + 3$, $2 + 4$, $1 + 5$, are compared to individual substances. The other analogy that Leibniz uses in 1676 is the town analogy, whose original versions I discussed in chapter 8, section 1, and whose examples are scattered across his later philosophy. The point of both analogies is to show how the products of the Supreme Being can instantiate the same essence and yet do so in a way different from every other. But the emphasis in each is slightly different. Like my translation analogy, the focus of the arithmetical analogy is the active individual substance who produces its version of the divine essence. The focus of the town analogy is the subject as a perceiver of the world.¹⁴³ Where the arithmetical analogies usually stress the way in which different created subjects can express the same thing, the town analogies usually emphasize the fact that the same essence can be grasped in a number of different ways. In the town analogy, there is often an epistemological moral: like the traveler whose perception of the town is radically different from the “Ideal” conception available from a tower in the town center, each created mind perceives only one aspect or mode of the divine essence. But the subtle suggestion of the image is that the traveler can enter the town and climb the tower, just as the wise person can attain the beatific vision. In his notes on Wilkins, Leibniz defines a mode as “a means by which something is thought.” The town analogy is supposed to reveal that for each thinking substance S, what the world is for S is a prearranged set of perceptions and, moreover, that each such set is only one among an infinity of modes of the divine essence, where each mode is a way to grasp that essence. In brief, while the arithmetical analogy reveals something about how active creatures express the divine essence, the town analogy displays how the divine essence can be thought in different ways. I postulate that as Leibniz became more and more committed to the Preestablished Harmony among minds and to the view that each mind just is another projection of harmony, he became more attached to the town image and became more inclined to think of God both as the ultimate source of these projections and as something that is accessed by such means. In conclusion to his essay *On forms or the attributes of God*, Leibniz writes in April 1676: “God thinks out infinitely many things in infinitely many ways.”¹⁴⁴ In a striking summary of his view, Leibniz writes in *Notes on metaphysics* at the end of the year:

There is no doubt that God understands how we perceive things; just as someone who wants to provide a perfect conception of a town will represent it in several modes [modis]. And this understanding of God, insofar as it understands our way of understanding, is very like our understanding. Indeed our understanding results from it, from which we can say that God has an understanding that is in a way like ours. For God understands things as we do but with this difference: he understands

143. For the arithmetical analogy, see, e.g., VI iii 512: Pk 67; VI iii 523: Pk 83. For the town analogy, see, e.g., VI iii 573: Pk 95; VI iii 524: Pk 85. Leibniz soon ceases to use the former analogy, but uses the latter in some of his most important later works. See, e.g., *Discourse on metaphysics*, sect.9; *Monadology*, sect.57; *First truths*, VI iv [B] 1646: AG 33/ L 269.

144. VI iii 515: Pk 71.

them at the same time in infinitely many ways, whereas we understand them in one way only.¹⁴⁵

According to Emanative Causation, the attributes of God constitute the metaphysical principles out of which individuals are made. I noted in section 1 that in the *Philosopher's confession*, Leibniz talks about "the series of things" which is formed out of the divine Ideas or attributes.¹⁴⁶ According to Leibniz in 1676, when these attributes are combined or related to one another, modifications of them arise. He writes: "from the conjunction of simple possible forms there result modifications, that is, ideas, as properties result from essence." The point is that when simple forms are combined, modifications of the essence of God result "just as properties result from essence."¹⁴⁷ In *On forms or the attributes of God* of April, Leibniz elaborates. Concerning the creator, he makes it clear that "the essence of God consists in the fact that he is the subject of all compatible attributes." Concerning the products of God, Leibniz claims that "any property or affection of God involves his whole essence."¹⁴⁸ For Leibniz, when God produces something, regardless of how small, "it involves the whole nature of God."¹⁴⁹ He writes: "Modifications . . . are what result from all other forms taken together." They have an "infinite variety," which "can only result from an infinite cause," i.e., from the infinitely various forms.¹⁵⁰ In brief, modifications come about when divine attributes are combined; such combinations always contain all divine attributes.¹⁵¹ Each modification is a product of the whole essence of God and therefore contains all the divine attributes; it is in this sense that each modification of God will contain the whole divine essence. Because of its infinite cause, each modification is bound to be infinitely complex itself. When we piece together these clues, they yield something very similar to claims (1) (2), and (3) of the Emanative Creation Story. It seems reasonable to assume that "the product," "modification," or "idea" that is supposed to result from the the combination of divine attributes is the (selected) divine essence. According to Leibniz, when the attributes of God are "related to one another, modifications result; hence it comes about that the same essence of God is expressed as a whole in any kind of world and, therefore, that God manifests himself in infinite modes."¹⁵² Moreover, according to Leibniz, individual substances

145. VI iii 400: Pk 115. A number of scholars have taken Leibniz's use of the Latin term 'modus' in the essays of 1676 to be evidence of Spinoza's influence. While there are texts that do suggest that Leibniz is trying on Spinozistic terminology, the use of the term in passages such as these is perfectly consistent with its use in the *Studies on the universal characteristic*, which was of course written significantly before Leibniz had heard about the *Ethics*.

146. It is noteworthy that in the *De summa rerum* papers, Leibniz is explicit about possible worlds. See, e.g., VI iii 512-13: Pk 67.

147. VI iii 521: Pk 81. 148. VI iii 514: Pk 69.

149. VI iii 514: Pk 69-70. 150. VI iii 522: Pk 83.

151. At VI iii 514, Leibniz writes: "proprietas sive affectio Dei totam eius essentiam involvit."

152. VI iii 514: Pk 71.

result when these modifications are instantiated in an active subject. He exclaims: "It is a wonderful thing that a subject is different from forms or attributes. . . . Thought is not duration, but what thinks is something that endures. And this is the difference between substance and forms."¹⁵³ That is, because substances are active things, they are the sorts of things that can endure and they are the kinds of things that instantiate properties. For Leibniz in *On forms or the attributes of God*: "The correct way of considering the matter is that forms are conceived through themselves; subjects, and the fact that they are subjects, are conceived through forms."¹⁵⁴ He continues: "particulars result" when forms "are combined with a subject." According to Leibniz, a subject is that which has a mind or principle of activity. Each subject or substance will be an instantiated modification or collection of divine attributes. God produces modifications through the combinations of his attributes or forms and then instantiates these in subjects. As he summarizes the point in an essay of April 1676 entitled *On simple forms*: "I cannot explain how things result from forms other than by analogy with the way in which numbers result from units – with this difference, that all units are homogeneous, but forms are different."¹⁵⁵

Since each subject is an instantiated modification and each modification is a combination of all the divine attributes, each substance will be a instantiation of the divine essence. Leibniz embraces this consequence. In *On the origin of things from forms*, also of April 1676, he writes: "It seems to me that the origin of things from God is of the same kind as the origin of properties from an essence; just as $6 = 1 + 1 + 1 + 1 + 1 + 1$, therefore $6 = 3 + 3$, $= 3 \times 2$, $= 4 + 2$, etc. Nor may one doubt that the one expression differs from the other. . . . So just as these properties differ from each other and from essence, so do things differ from each other and from God."¹⁵⁶ Each created substance is an expression of God's essence, and in this sense each has the same essence. But each nonetheless differs from every other because it is a *different* expression of that essence. God creates each substance so that it will express the (selected) divine essence in its own way. Like the different translations of the selected story, where each series of sentences is a different expression of the same propositions, each substance is a different expression of the same essence.

Two obvious questions arise at this point. The Creaturely Inferiority Complex insists that each creature contains the divine attributes but in a manner inferior to their divine source. What does Leibniz have to say about this topic? In 1676, he is explicit about the fact that it is appropriate "to ascribe" the divine features to the things of the world. For example, he claims that a creature has the immeasurability of God if it can be said to be somewhere; it has the omniscience of God if it can be said to perceive. But he also insists that strictly speaking, the absolute affirmative attributes of God are not *in* the world. For example, he writes in *On the origin of things from*

153. VI iii 514: Pk 69. 154. VI iii 514-15: Pk 71.

155. VI iii 523: Pk 85. 156. VI iii 518-19: Pk 77.

forms that God “contains the absolute affirmative form that is ascribed in a limited way to other things.” According to Leibniz, it is appropriate to ascribe the attributes of God to creatures, but it remains true that “God is not part of our mind” nor is the Supreme Being in any of the creatures which participate in the divine attributes.¹⁵⁷ In *On simple forms*, Leibniz writes: “all things are in a way contained in all things. But they are contained in a quite different way in God from that in which they are contained in things.”¹⁵⁸ Therefore, the divine attributes are in creatures but in a limited way.

In the *Philosopher’s confession*, Leibniz makes a distinction that helps make sense of this:

Even complete cognitions can increase, not by novelty of matter, but by novelty of reflection. If you have nine units accessible to you, then you have comprehended completely the essence of the number nine. However, even if you were to have the material for all its properties, nevertheless you would not have its form or reflection [formam seu reflexionem]. For even if you do not observe that three times three . . . and a thousand other combinations are nine, you have nonetheless thought of the essence of the number nine. . . . I will give an example of a finite thing representing [praebentis] properties that are infinite without any comparison with external things. Here is a circle: if you know that all the lines from the center to the circumference are equal, in my opinion, you consider its essence sufficiently clearly. Still you have not comprehended in virtue of that innumerable theorems.¹⁵⁹

In an essay of December 1675 entitled *On mind, the universe, and God*, Leibniz makes the same point: “we do not have any *idea* of a circle, such as there is in God, who thinks all things at the same time. . . . We think about a circle, we provide demonstrations about a circle, we recognize a circle: its essence is known to us – but only part by part. If we were to think of the whole essence of a circle at the same time, then we would have the idea of a circle.”¹⁶⁰ He goes on to explain that only God can do this. In an essay of November 1676, Leibniz adds further help. He defines ‘perfection’ as a “simple quality that is positive and absolute or [seu] that expresses without any limits what ever it does express.”¹⁶¹ By piecing together these clues, we attain the following: for any essence E, whether infinite or finite, there is a range of possible cognitions of it, from partial to complete, where a partial cognition of E is to grasp one of its properties and a complete cognition of E is to grasp every such property. Moreover, for any essence E, whether infinite or finite, it may be “represented” or “expressed” more or less clearly, although each property of E is a partial expression of it.

With these distinctions in hand, we can articulate more precisely what Leibniz means when he claims in the essays of 1676 that the divine attributes are in creatures but in a limited way. We can also grasp more fully than was previously possible the full significance of the arithmetical and town

157. VI iii 520: Pk 79–81. 158. VI iii 523: Pk 85.

159. VI iii 139–40. 160. VI iii 462–63: Pk 5.

161. VI iii 577: Pk 99. See also VI iii 578: Pk 101, where he uses exactly the same Latin phrase, namely, “quicquid exprimit sine ullis limitibus exprimit.”

analogies. As employed in *On the origin of things from forms*, the arithmetical analogy assumes that each of the expressions $3 + 3$ and $2 + 2 + 2$ is a partial expression or instantiation of the essence 6, and by analogy, that each creature is a partial expression of God. That is, each creature contains a limited expression or representation of the divine essence. If one understands $3 + 3$, then one understands the essence of 6; if one understood the nature of a substance, then one would grasp the essence of God. But not the whole essence. Each of these expressions is an instantiation of the fundamental nature or essence of God, but only part of it. So, just as to understand a circle fully is to grasp every possible expression of its essence, to understand God fully is to grasp every possible expression of it. Leibniz confirms this idea in another essay of April 1676. In *On truths, mind, God, and the universe*, he writes: “Just as the number 3 is one thing, and 1, 1, 1 is another, for 3 is $1 + 1 + 1$. To this extent the form of the number 3 is different from all its parts; in the same way things differ from God, who is all things. Creatures are some things.”¹⁶² Suppose the numbers 4, 5, and 6 to be attributes of God. For each of these attributes, there is an infinite number of expressions of each and there is an infinite number of combinations of these expressions. If we combine one expression of 4 (say, $2 + 2$) with an expression of 5 (say, $15 - 10$) with the expression of 6 (say, $486 - 480 + 30$ divided by 6), then we have a combination or modification of these divine attributes. This extension of the arithmetical analogy offers the tools with which to construct a relatively precise account of how the products or modes of God differ from one another and yet are all (limited) expressions of the same thing: a substance S expresses a substance R just in case S is (at least) a partial expression of the essence of R (and S is not identical with R); if S expresses R (and therefore is a partial expression of the essence of R), then R will express S, since R will also be a partial expression of the essence of S. That is, the *expresses* relation among created substances is reciprocal. As Leibniz writes in *On the origin of things from forms*: “It seems to me that the origin of things from God is of the same kind as the origin of properties from an essence; just as $6 = 1 + 1 + 1 + 1 + 1 + 1$, therefore $6 = 3 + 3, = 4 + 2$, etc. Nor may one doubt that the one expression differs from the other. . . . So just as these properties differ from each other and from the essence, so do things differ from each other and from God.”¹⁶³

On the basis of Leibniz’s definitions in *Studies on the universal characteristic*, I revised the Substantial Form Assumption in chapter 9 to include the claim that the thoughts of a mind F are more or less clear instantiations of

162. VI iii 512: Pk 67.

163. VI iii 518–19: Pk 77. The doctrine of expression as it appears in the mature philosophy is notoriously difficult to articulate. There has been a good deal of discussion in the literature both about what exactly the doctrine is and what motivated it. The earliest date that has been given for the emergence of the doctrine is 1678–79, and most commentators have placed its development at the time of the *Discourse on metaphysics* of 1686. For the best accounts of the doctrine, see, e.g., Mates, *The Philosophy of Leibniz*, 37ff; Sleigh, *Leibniz and Arnauld*, 170ff; Kulstad, “Causation and Pre-Established Harmony,” 93ff.

the (selected) divine essence. Although Leibniz is nowhere explicit about this point in 1676, the texts suggest that the partial expressions of God will differ in clarity. It does seem obvious, for example, that $1 + 1 + 1 + 1 + 1$ is a clearer presentation of the essence 5 than is $(100 - 99) + (2 \times 7) - (25 - 15)$. Although each is a partial expression of 5, one is clearer than the other. Similarly, the traveler who stands just outside the town wall will grasp much less of the nature of the town than someone who has arrived at the town center by meandering through all its streets. In this case, each of an infinity of substances could be a partial expression of the (selected) divine essence, and yet each could differ in its level of clarity. According to Leibniz, “the essence of all things is the same, and things differ only modally, just as a town seen from a high point differs from the town seen from a plain.”¹⁶⁴ The town is the essence of God, which has an infinity of modes, each of which can be thought and each of which (in theory) allows a partial cognition of that essence. But some of these modes and some of these cognitions are more confused than others. In a passage, some of which we have seen, Leibniz suggests as much: “It seems to me that every mind is omniscient in a confused way; that any Mind perceives simultaneously whatever happens in the entire world, and that these confused perceptions of infinite simultaneous varieties give rise to the sensations that we have of colors, tastes, and tactile sensations.”¹⁶⁵

This brings me to the second question that arises concerning Leibniz’s views in 1676 about emanative creation and the relations between creatures. Among the definitions in the *Studies on the universal characteristic*, we found evidence that the correspondence relation between created substances was ultimately to be explained in terms of fluctuations in the clarity of the instantiations of the (selected) divine essence. That is, all the correspondence relations among creatures, including the causal relations, were to be explained in such terms. Is there evidence of this view in the texts of 1676?

Although the clues are scarce, they are significant. Scholars have recognized the fact that in 1676, Leibniz asserts for the first time the equipollence principle, according to which an effect is “equal in power” to its cause; and some commentators have been right to note the importance of the principle to Leibniz’s physics.¹⁶⁶ As he asserts in a note written between 1674 and 1676, “a primary axiom . . . of physics is that the entire effect is equipollent to its cause.”¹⁶⁷ What, if anything, does Leibniz’s core metaphysics have to do with this axiom in physics? As noted in the last section, Leibniz committed himself in April 1676 to the view that knowledge of the effect “involves its cause”

164. VI iii 573: Pk 95. The sense of *expressio* used here is different from the mathematical and functional account that Leibniz came to use later. For a thorough account of the latter, see Mark Kulstad, “Leibniz’s Conception of Expression.”

165. VI iii 524: Pk 85.

166. For a brief account of the principle’s early articulation, see Parkinson, *De Summa Rerum*, Introduction, xlii; for its role in Leibniz’s physics and citation to some other literature, see Garber, “Leibniz: Physics and Philosophy,” 279. Also see Duschesneau, *La dynamique*.

167. VI iii 427.

and leads to knowledge of its cause. When he first makes this claim in the *Meditation on the principle of the individual*, his concern is with the relation between a substantial nature and a substantial state. By the fall of 1676, he is prepared to apply the equipollence principle to the relation between substances, where the idea is that the effect is equal in power to the cause. His most complete presentation of the point in 1676 appears in a note of December 12 entitled *A chain of wonderful demonstrations about the universe*. Leibniz writes: “*There is nothing without a cause*, since there is nothing without all the requisites for existing. *The entire effect is equipollent to the full cause*, since there must be some equality between cause and effect, passing from one to the other. Truly, it consists in this equipollence nor can another measure be found.” In the same essay, Leibniz displays his phenomenalism. He maintains: “there are no Entities besides bodies and minds, that is, what we sense [qualia sentimus].”¹⁶⁸ Against the background set both by the *Metaphysics of Divinity* and by the definitions of 1672 in his *Studies on the universal characteristic*, it is reasonable to assume that underlying the equipollence principle is the idea that a cause and its effect are in perfect prearranged harmony. Concerning efficient causation in physics, for example, the clarity of the instantiation of the (selected) divine essence of the cause is properly coordinated with the clarity of the effect. Although Leibniz does not offer many details of the equipollence relation in *A chain of wonderful demonstrations about the universe*, he does make an important assertion, namely, that “the cause is equipollent to the effect not in perfection but in expression.”¹⁶⁹ Since for Leibniz in 1676, each substance is a partial expression of the divine essence, this comment suggests that substances can differ in perfection, although they express or instantiate the (selected) divine essence equipollently. It would seem to follow that the equipollence principle is consistent with the claim about efficient causation in *Studies on the universal characteristic*. According to the relevant definitions (that is, definitions [4] and [11]), for two substances S_1 and S_2 , where S_1 acts (efficiently) on S_2 , there is a state in S_1 that is followed by a change in S_2 and moreover there is a conservation or increase of the perfection of S_1 and a diminishing of the perfection of S_2 . What Leibniz says in *A chain of wonderful demonstrations about the universe* is consistent with this claim. The point in late 1676 seems to be that, whether the causal relation is between God and creatures, between a creature and its state, or between two creatures, the cause is equipollent to the effect in expression, though *not* in perfection. That is, the equipollence principle seems to apply nicely to a world in which substances express the same (selected) divine essence, although with greater or lesser clarity. To speak precisely, each substance bears the same *Expression Relation* to the essence of God, but each expresses that essence more or less clearly.

168. VI iii 584: Pk 107; also see VI iii 400: Pk 115.

169. VI iii 584: Pk 109. From the text, it is clear that Leibniz intends to apply the equipollence principle to the causal relation between God and creatures and that he believes that a cause and effect can differ in perfection and yet be equipollent.

Moreover, given Leibniz's newly developed doctrine of traces, it also follows that each state f of a mind F bears an Expression Relation to F and hence to the essence of God. That is, the transitivity of the relation is assumed and each state of a substance expresses the (selected) divine essence. To speak precisely, whether the product is a creature or a state of a creature it has an Expression Relation with its divine source.

In this subsection, we have seen ample evidence in the essays of 1676 of the continued endorsement of Emanative Harmony in general and of parts (1), (2), (3), and (5) of the Emanative Creation Story in particular, and we have witnessed a clarification of the Creaturely Inferiority Complex. That is, in 1676 Leibniz was keen to extend his Metaphysics of Divinity and make more precise his views about the relation between God and creatures. Among other things, Leibniz was interested to clarify the way in which each creature manifests the (selected) divine essence but does so in a manner that is different from and yet related to every other. Before turning to the next subsection, it will be convenient to summarize the Expression Relation.

- The (1676) *Expression Relation* is such that S expresses an essence E just in case S is a partial representation of E which means (at least) that to understand S is equivalent to having a partial cognition of E . In the texts of 1676, every created substance (and every state of a substance) has an Expression Relation with God: because every created substance S (and every state of S) contains the (selected) divine essence, S (and every state of S) will be a partial expression of the divine essence. Moreover, for any two distinct substances S and R , each can be said to express the other because each is a partial (though distinctive) expression of the same divine essence.

Prestablished Harmony

As noted in chapter 8, I take Prestablished Harmony to consist of the Complete-*Ratio* Theory of Substance and (Strong) Parallelism. As also explained there, in a world constituted entirely of minds and their thoughts, Complete-*Ratio* Phenomenalism entails the Complete-*Ratio* Theory of Substance. That is, in a world constituted of mind-like substances, Complete-*Ratio* Phenomenalism and (Strong) Parallelism are equivalent to Prestablished Harmony. The texts of 1676 contain ample evidence of these doctrines.

On February 11, 1676, in the same essay in which he first explicitly commits himself to plenitude, Leibniz articulates his assumptions about the prearranged activities of minds. He ends *On the secrets of the sublime or on the greatest of things* by noting that "God arranged things from the beginning" so that minds can "understand their function."¹⁷⁰ In an essay of early 1676, he offers a definition helpful to his account of exactly how minds do this. In *On magnitude*, he writes: "A rule [regula] is an instrument of action, determining the form of the action by the perpetual and successive appli-

170. VI iii 477: Pk 31.

cation of the agent to the parts of the instrument.” From the examples he gives, it is clear that the rule not only specifies what the actor does, but the order in which it is done. According to Leibniz, a footpath across a plain is a rule, but a compass is not. He explains: “The instruction which an emperor gives to a deputy . . . is a rule if it is written so that the deputy, in his action, can only follow it in order.”¹⁷¹ In the texts of 1676, Leibniz attributes just such a rule to individual minds by means of which they can act according to their divinely prearranged plan.

Before returning to Leibniz’s personal notes, it will be helpful to consider one of the few letters written in the period that has a bearing on our metaphysical topics. Among the prominent French philosophers with whom Leibniz made contact in Paris was Simon Foucher, whose theory of traces was noted above. Relevant here is the fact that Foucher was deeply interested in ancient skepticism and encouraged Leibniz to think more seriously than he previously had about skeptical questions.¹⁷² In a letter to Foucher written sometime in 1675, Leibniz summarizes his position:

I agree with you that it is important once and for all to examine all our presuppositions in order to establish something sound. For I hold that it is only when we can prove everything we assert that we understand perfectly the thing being considered. . . . As I see it, your purpose is to examine those truths which affirm that there is something outside of us. You seem to be most fair in this, for thus you will grant us all hypothetical truths which affirm, not that something does exist outside of us, but only what would happen if anything existed there.¹⁷³

With this context set, Leibniz goes on to present, among other things, an argument to the conclusion that “there is some cause outside of us for the variety of our thoughts.” About the argument, he says:

So we make great strides toward fabricating what we call matter and body. But at this point you are right in stopping us for a while and renewing the criticisms of the ancient Academy. For at bottom all our experiences assure us of only two things: first, that there is a connection among our appearances which provides the means to predict future appearances successfully; and, second, that this connection must have a constant cause. But it does not follow strictly from this that matter or bodies exist but only that there is something which gives us appearances in a good sequence.¹⁷⁴

After criticizing Descartes’ response to skepticism, Leibniz insists that

the more closely we examine our appearances, the better ordered we find them, as microscopes and other means of observation have shown. This permanent consis-

171. VI iii 483; Pk 39.

172. Although Ezequiel de Olaso has argued in his interesting paper, “Leibniz and Scepticism,” that by “about 1670 Leibniz has completed his first and very profound study of scepticism” (147), the facts do not substantiate this claim. During the 1660s, Leibniz does mention a number of skeptics, and every now and then acknowledges an awareness of skeptical questions, but he does not take skepticism seriously. In fact, I do not think that he takes it very seriously in 1675-76; rather, he recognizes that his Complete-*Ratio* Phenomenalism constitutes a response to some skeptical arguments and is happy to point that out.

173. II i 245-46; L 151. 174. II i 248; L 153.

tency gives us great assurance, but after all, it will be only moral until somebody discovers a priori the origin of the world which we see and pursues the question of why things are as they appear back to its foundations in essence. For when this is done, it will be demonstrated that what appears to us is reality and that it is impossible for us ever to be deceived in it. But I believe that this would very nearly approach the beatific vision and that it is difficult to aspire to this in our present state. Yet we do learn therefrom how confused the knowledge which we commonly have of body and matter must be, since we believe we are certain that they exist, but eventually find that we could be mistaken.¹⁷⁵

We have here a fine example of Leibniz's Rhetoric of Attraction: he accepts the position of his interlocutor and then uses it to uncover an explanatory gap that his own philosophical proposals fill. I claimed in chapter 8 that for Leibniz as early as 1671, the world is an elaborately constructed appearance whose source is the perceiving mind itself. In the letter to Foucher, Leibniz summarizes the epistemology articulated in chapter 8, section 2: when we abstract from the variety of things and notice the consistency and interconnections among the appearances, we begin the journey to the truth, which will lead us to the divine essence of things and finally to the beatific vision.

In the last section, I considered several essays written in the spring of 1676 in which Leibniz examines the exact relation between the divine essence and its products. In these same essays, he also analyzes the relation between the created beings and their products or states. In *On truths, the mind, God, and the universe*, composed on April 15, he writes: "On due consideration, only this is certain: that we perceive, and that we perceive in a consistent way [congruenter], and that a certain rule [regulam] is observed by us in perceiving. For something to be perceived in a consistent way is for it to be perceived in such a way that a *ratio* can be given for everything and everything can be predicted."¹⁷⁶ According to Leibniz here, on the basis of the consistency of our perceptions, we can infer that there is a *ratio* for everything, that everything can be predicted, and that in sensing we observe a rule. What exactly is the cause of the consistency of perceptions and how is that cause a rule? From the text so far quoted, the consistency of perceptions could be caused either by something internal to the mind, like a Production Rule, or by something external to it, like the physical world. Leibniz clarifies matters in what follows and in the process, proposes Complete-*Ratio* Phenomenalism and (Strong) Parallelism. He writes:

This is what existence consists in: in perception that follows certain laws [leges]. For otherwise, everything would be like dreams. Further, it consists in the fact that several people perceive the same, and perceive consistently [consentientia]; and that diverse minds perceive themselves and their own effects. From this it follows that there is one and the same cause that causes our own and others' perceptions. Nevertheless it is not necessary either that we act on them or that they act on us, but only that we

175. II i 249: L 154. It is not surprising that some commentators have taken passages such as these to imply a form of skepticism. See, e.g., Brown, *Leibniz*, 39-47.

176. VI iii 511: Pk 63.

perceive with such conformity; and necessarily so, on account of the sameness of the cause. . . . Therefore there is no reason why we should ask whether there exist certain bodies outside us or whether space exists, and other things of this sort; for we do not explain adequately the terms that are involved here. . . . [I]t does not follow that there exists anything but perception, and the cause of this perception and its consistency.¹⁷⁷

In *On truths, the mind, God, and the universe*, Leibniz makes it clear that in order to explain existence, it is unnecessary to resort to outside bodies. He proposes that we reduce existence to the consistency of perceptions, where the latter includes both the consistency of the perceptions within a mind and the coordination or parallelism among minds. There is no reason to ask whether bodies exist outside us because the consistency of perceptions and coordination among minds can be explained elsewhere. Although Leibniz is not explicit in the quoted text about what this cause of the consistency of perceptions is, he offers some details about what it does: the cause produces the consistency of perceptions within a mind and the coordination of perceptions among minds; it offers a reason for everything and a means of predicting everything; and it somehow involves diverse minds perceiving “themselves and their own effects” in a way that does not require that they act on one another. That is, assuming that the cause is somehow internal, what the cause does is produce all our perceptions and hence all our states. It also brings about the correspondence between our perceptions and those of others. In response to the fact that we do not adequately explain terms like ‘body’ and ‘space,’ Leibniz proposes that “we call ‘body’ whatever is perceived in a consistent way” and define ‘space’ as “that which brings it about that several perceptions cohere with each other at the same time.” In short, the definitions of these terms depend on his phenomenalism and parallelism.¹⁷⁸ In the same text in which he first defined ‘rule,’ we find another assertion of parallelism. Leibniz writes in *On magnitude*: “if we were perfectly knowing, i.e., if we were gods, we would easily see that those things which, because of our ignorance, now appear to exist at the same time by accident, co-exist by their very nature, i.e., by the necessity of the divine intellect.”¹⁷⁹ In *On existence* of December 1676, Leibniz maintains: “We have no idea of existence, other than that we understand things to be perceived. . . . Without sentient beings, nothing would exist. Without one primary sentient being, which is the same as the cause of all things, nothing would be perceived.”¹⁸⁰ Leibniz summarizes the point in a passage from *On truths, the mind, God, and the universe* of April 1676, part of which we have seen:

the mind will be created by God, since it will exist and remain by the will of God, that is, by the will of the good intellect. For to exist is simply to be understood to be good. Existence is stated equivocally of bodies and of our mind. We sense or perceive that we exist; when we say that bodies exist, we mean that there exist certain consistent perceptions, having a particular constant cause. Just as 3 is one thing, and

177. VI iii 511: Pk 63-65. 178. VI iii 511: Pk 63-65.

179. VI iii 484: Pk 41. 180. VI iii 588: Pk 113.

1,1,1 is another – for 3 is 1 + 1 + 1. In such a way, the form of 3 is different from all its parts; so creatures differ from God, who is all things. Creatures are some things.¹⁸¹

We exist and perceive as we do because of harmony. According to Leibniz in *On existence*, “[h]armony is just this: a certain simplicity in multiplicity. Beauty and pleasure also consist in this. So for things to exist is the same as for them to be understood by God to be the best or the most harmonious.”¹⁸² Consistent with the interpretative story told in chapters 6 through 9, God emanates the (selected) divine essence to the world, where it exists as a thoroughly ordered collection of instantiations of itself. As Emanative Harmony insists, God is the variety in the world in that every substance, although it contains the same (selected) divine essence as every other, also contains a Production Rule according to which it instantiates that essence in a different way from every other. For each mind F, bodies exist for F, and F’s perceptions have the ordered they do because of F’s Production Rule; moreover, F has that Production Rule because it is part of the most harmonious world. In *On the secrets of the sublime or on the greatest of things*, Leibniz insists that God is the kind of “intelligent substance” and “perfect mind” who finds what is “most harmonious” to be “most pleasing” and who “arranged all things from the beginning” such that “all things are in general good.”¹⁸³

I noted in the Introduction to this book that Leibniz describes his papers of the period as “poorly expressed vestiges of hasty reflections,”¹⁸⁴ and his essays of 1676 are surely obscure. But large sections of these texts are rendered transparent once we see them as describing a world in which each substance expresses the (selected) divine essence from its own perspective and does so *because* of its Production Rule.¹⁸⁵ For example, once we realize that the missing “single cause” in *On truth, the mind, God, and the universe* is the essence of God, and once we grasp that the notion of rule employed there is that of a Production Rule, we are able to make out the full significance of Leibniz’s proposals. In short, once we place the texts of 1676 against the interpretative background described in previous chapters, the sub-theses of Preestablished Harmony, namely, (Strong) Parallelism and Complete-*Ratio* Phenomenalism, are discernible. Finally, we should not lose sight of the fact that much of the terminology used to describe these doctrines in 1676 was discovered in the texts of 1671–early 1672.

As a conclusion to my discussion of Leibniz’s thought in 1676, I would like to emphasize the fact that despite the genuine obscurity of these texts, we have discerned all the major features of the core metaphysics. These writings show that during his final months in Paris, Leibniz continued to

181. VI iii 512: Pk 65–67. 182. VI iii 588: Pk 113.

183. VI iii 475–76: Pk 27–29. 184. VI iii 533.

185. In her erudite survey of Leibniz’s development, C. Wilson recognizes some of the complications in the papers of 1676 that I have discussed. See her *Leibniz’s Metaphysics*, 58–77.

apply his *Metaphysics of Method*, *Divinity*, and *Substance* to the philosophical questions that interested him, and that in some cases, he added important new details to those doctrines. Once again, we see Leibniz submitting his core tenets to a number of difficult philosophical examinations. Once again, we witness those doctrines passing the tests.

4. Completeness and truth, 1676–79

When Leibniz left Paris in September 1676, he remained thoroughly committed both to his core metaphysics and to the slight revisions that he had made during his last months in the French capital. There are two doctrines of his mature philosophy that are conspicuously absent from the system articulated above. The first and more important of these is the well-known theory of truth, according to which an affirmative categorical proposition is true just in case the concept of its predicate is contained in the concept of its subject. The second is the assumption that a substance is a complete being. Related to the latter is the distinction between unities *per se* and unities *per accidens*, where the idea is that only genuine substances fall into the former category, while aggregates like tables, air-pumps, and whirlpools fall into the latter. In this section, I will discuss how the metaphysics of 1676 motivated the evolution of these doctrines. The theory of truth is underdetermined by the core metaphysics. I do not mean to suggest that there were not other factors that contributed to the development of that theory. There no doubt were. But it is important to recognize that these developments in Leibniz's thought are a natural outgrowth of his core metaphysics.¹⁸⁶

Beginning in the autumn of 1676 and continuing for several months, Leibniz was concerned to investigate a number of problems related to his core doctrines. Among other things, he continued in his search for a solution to the problem of the continuum. In October 1676, he began to submit his views about body and motion to a new battery of tests.¹⁸⁷ The result was the development of his notion of force, which he first articulated in 1678 and which constituted a major contribution to seventeenth-century physics. At the same time, he searched for a way to streamline and summarize his metaphysical doctrines, especially the tenets that surrounded his notion of substance. These investigations forced Leibniz to clarify some of his intuitions about substance, and they encouraged him to develop his theory of truth. It will be helpful to explore some of the problems and solutions that led to these developments. The problems have their roots in the texts of 1676.

186. Due to the publication of three new volumes of Leibniz's philosophical papers, it is now possible to tell a precise story of the steps in his development after 1676. See VI iv, parts A, B, and C.

187. In the spring of 1676, Leibniz wrote: "One must unravel, with the greatest rigour, the entire labyrinth concerning the composition of the continuum" (VI iii 475: Pk 27). The problem continued to provoke him and, as will be noted in sect. 5, he wrote an important dialogue on this and related issues in the fall of 1676. See VI iii 528–571.

Substances, aggregates, and completeness

In the spring of 1676, Leibniz was taking great strides in the careful articulation of his views on God, mind, and their interrelations. He was not as successful on the topic of body. In the essay of March entitled *Notes on science and metaphysics*, he poses a problem for which he does not have an adequate solution: "Since mind is something that has a certain relation to some portion of matter, it must be stated why it extends itself to this portion and not to all adjacent portions; or why it is that some body, and not every body, belongs to it in the same way."¹⁸⁸ At the center of Leibniz's Theory of Corporeal Substance stands the notion of a core of substance which, for a corporeal substance S, is constituted of the mind-like substantial form F in S and the dominant minds in the subordinate substances in the passive principle P in S. The Prearranged Diffusion Relation between F and P is based on the idea that F and P form a unity just in case P acts according to the instructions in F and, moreover, that the substantial feature f, which results from the activities of P, is perceived by F. It is consistent with the Diffusion Relation that F can diffuse a greater or lesser expanse of body, or to put it another way, the core of S can expand to a large body or shrink to an "invisible center." Because F constitutes the identity of S and is the source of its unity, S remains the same thing regardless of its changes. The Theory of Corporeal Substance is perfectly tailored to fit the metaphysical demands of the Eucharist and resurrection. But the theory does not apply so easily to the constantly changing collections of bodies that are studied by the mechanical philosopher.

In the spring of 1676, as Leibniz reevaluated and clarified his core metaphysics, he became acutely aware of the difficulties that the Theory of Corporeal Substance and its related doctrines about activity and unity posed in physics. According to Leibniz's metaphysics, in each corporeal substance there is a mind-like substantial form that acts as the source of substantial unity and identity. According to the Prearranged Diffusion Relation between the mind-like substantial form F and the passive principle P in a corporeal substance S, P is an organized arrangement of subordinate substances. In a sense, P is an aggregate, each of whose constituents bears a special relation to F. In March 1676, Leibniz articulates some problems in allowing for any sort of unity that is not one of Prearranged Diffusion. In his *Notes on science and metaphysics*, Leibniz neatly summarizes the problem in a passage, part of which we have seen:

Let us assume that there is some portion of matter, uninterrupted and surrounded on all sides by a vacuum; let us say that it pertains to that portion of matter that it has some mind of its own because of the fact that this portion is separated from every other portion. Now let us assume that it is touched by another portion of matter, like an island floating in the vacuum; it will follow from the contact alone that these two minds coalesce into one, since no vacuum is interposed, from which it will follow

188. VI iii 392: Pk 45.

that the thoughts of each are mingled. . . . But if you think that a new mind comes into being with this contact, because a new body has been formed, then it will have to be said that the two former minds have perished, since the two bodies have also perished. But if you say that they are preserved, even though the body is extinct, then there will certainly be as many minds in any body as there are assignable points in it, which is impossible. . . . [T]herefore I agree, on other grounds, that there is some solid and unbreakable portion of matter. . . . [F]rom all this it follows that thought enters into the formation of matter, and there comes into existence a body which is one and unsplittable, or an atom, of whatever size it may be, whenever it has a single mind.¹⁸⁹

In what sense is it true that “thought enters into the formation of matter?” According to the Substantial Form Assumption, the unity between F and P consists in their Prearranged Diffusion Relation whose relevant claim here is that F thinks the substantial state *f* that results from the Prearranged Diffusion Relation between F and P. In this case, thought enters into the formation of matter in the sense that a collection of corporeal substances will be part of a real unity if and only if the states of those substances perfectly correspond to the thoughts of a single mind. That is, Leibniz’s conclusion amounts to the following: for any portion of matter or (what is the same thing) for any collection of corporeal substances, they will constitute a genuine thing if and only if there is a single mind that stands in a relation of Prearranged Diffusion with them or, in other words, that forms an atom with them.

Within this context, it is not surprising that very soon after the composition of *Notes on science and metaphysics*, Leibniz makes his first explicit distinction between bodies as atoms and bodies as mere aggregates. In *On the origin of things from forms* of April 1676, he summarizes his point: “Whatever acts cannot be destroyed. . . . Every body that is an aggregate can be destroyed. There seem to be elements, i.e., indestructible bodies, because there is a mind in them.”¹⁹⁰ It follows from Leibniz’s views about unity and being that if an aggregate can be destroyed, then it lacks being and unity. But we need to do some explaining here. According to the physics and metaphysics of the early 1670s, an aggregate of vital beings or corpuscles is something that moves and hence something that acts. What does Leibniz have in mind in this essay of April 1676? His point here – which I take to be a new clarification of his views about substance – is that strictly speaking, only substances act because only substances have active principles that can cause their states. Another way to approach the point is to note that given the Principle of Causal Self-Sufficiency, an aggregate cannot strictly have an active (or passive) state *f* because it does not have a persistent substantial core that can act as the complete *ratio* of *f*. The Principle of Causal

189. VI iii 393; Pk 45–47. I take the “other grounds” cited in the penultimate sentence to be the theological ones (e.g., resurrection) for which Leibniz argued in 1671 and which I described in chapters 7 and 8.

190. VI iii 521; Pk 81.

Self-Sufficiency demands that every substantial feature be caused by the nature of the substance to which it belongs. For Leibniz in the spring of 1676, the problem was how to build the proper causal bridge between the constantly changing corporeal features of the world and some underlying active mind. Each feature had to be caused and explained by some mind, but which one and how?

In a short paper of December 1676, we find the distinction between substance and aggregate made more sharply. According to Leibniz in *A chain of wonderful demonstrations about the universe*, the “atoms” are “the fundamental elements” out of which “cohering bodies arise,” so that “all things come from” them.¹⁹¹ It is significant that in order to make his point, Leibniz distinguishes between complete and incomplete beings where the idea is that only substances are complete. In *Notes on metaphysics*, also of December 1676, he writes:

A substance or complete Being [Ens completum] is for me that which alone involves [involvit] all things, or for the perfect understanding of which, no other thing needs to be understood. A figure [figura] is not of this kind, for in order to understand from what a figure [figura] of such and such a kind has arisen, there must be a recourse to motion. Each complete being can be produced in only one way: that figures [figurae] can be produced in various ways is enough to indicate that they are not complete Beings.¹⁹²

In order to grasp Leibniz’s point here, we must unpack the definition of ‘complete being’ [Ens completum] on which his argument depends. For help with the claim that a substance or being “involves all things,” let’s return to the *Meditation on the principle of the individual* of April 1676. In section 2, we saw that for Leibniz there, an effect “involves [involvere] its cause” in the sense that “whoever understands some effect perfectly will also arrive at knowledge of its cause.” Given our present concerns, it is important that Leibniz explains himself in that essay by insisting: “it is necessary that there be a certain connection between a complete cause [causa integram] and the effect.” While Leibniz does not explain what the relation is between a complete being and a complete cause, the passage from *Notes on metaphysics* is clear about the fact that a complete being is such that an understanding of it entails an understanding of “all things [omnia].” But exactly what things are these? In the second half of the first sentence, Leibniz tells us: a complete being or substance S involves all things in the sense that a perfect understanding of S is possible and, moreover, in order to acquire such an understanding, nothing else needs to be understood.

In our analysis of Leibniz’s *Metaphysics of Substance*, we have come

191. VI iii 585; Pk 109.

192. VI iii 400; Pk 115. The Latin “figura” is ambiguous in an important way. It can mean figure or shape, but also nature, kind, or species. When talking about the stuff of which bodies are made, Leibniz employs the latter sense, where the idea is that the matter is an organized arrangement that makes up the nature of the body. See II i 10f, 18; VI i 502; VI ii 16.

across only one sort of thing that can be understood in the relevant sense, namely, a substance. But what makes a substance the sort of thing that can be understood in this way? Leibniz's *Metaphysics of Substance* offers a good deal of help. It follows from the Principle of Substantial Self-Sufficiency, the Principle of Substantial Activity, and the Substantial Nature Assumption that a created substance is the sort of thing that can offer a complete *ratio* of all its features and that can (in theory) be perfectly understood. Because a substance is causally autonomous, it depends on nothing else (besides its divine source) either to be what it is or to be understood. Leibniz's *Metaphysics of Divinity* also affords important insight into Leibniz's (new) notion of completeness. According to the Emanative Creation Story, for every created substance, there is a complete concept in God's mind that contains all the predicates of S. The complete concept of S contains exactly those things, whose understanding would entail an understanding of S. Thus, a complete being or substance S involves all things in three related senses. First, S has a complete concept that includes all the predicates that can be truly attributed to S and whose understanding entails an understanding of S. Second, given Emanative Harmony (and the Expression Relation), S involves all things in the sense that to understand the concept of S is to have a partial understanding of the nature of God, which is all things. Third, S involves all things in the sense that every state or thought of S is a mirror of everything in the world. By the spring of 1676, each state of each substance mirrors and in that sense contains the whole world, past, present, and future. Thus, when Leibniz makes all substances eternal mirrors of all the others and when he adds traces of all past states to every present state of a substance, he suggests that a complete understanding of a single substantial state would lead to a complete understanding of the world.

But it is important that Leibniz's point in the quotation from *Notes on metaphysics* is much more than an epistemological one. The passage goes on to explain that each complete being can be produced in only one way. According to Leibniz here, the crucial difference between a complete and an incomplete being is that the former and not the latter can be produced in only one way. But this is odd. Given that for Leibniz in 1676, the world is constituted of mind-like substances and their states, it is not at all clear that there *is* anything that can be produced in more than one way. Surely there is only one way that either a mind-like substance or a substantial state can be produced. I propose that this is Leibniz's point: anything that can be produced in more than one way is not a *thing* at all. For help with this idea, let's recall the Supreme Being Assumption, whose relevant claim here is that unity and self-sufficiency are a function of being. Anything that is self-sufficient in the required way will produce and maintain itself. Otherwise it will not be a substance. As the Principle of Substantial Activity insists, a thing that does not have its own source of activity will not subsist *per se* and a thing that does not subsist *per se* will not be a substance. For Leibniz in 1676, a substance will also have a Production Rule that tells its eternal mind-like form how to emanate its version of the (selected) divine essence. Therefore,

in 1676, a complete being is one that produces itself where the idea is that it has its own principle of activity and its own Production Rule by means of which it maintains its unity, self-sufficiency, and (eternal) nature.

But what about the figure or aggregate? Unlike a complete being, a figure has neither its own principle of activity nor its own source of unity and being. It can be produced in more than one way because it does not have a nature in terms of which it creates and sustains itself. It does not have its own Production Rule. The unity and being that it has are temporary and depend entirely upon the activity of its constituents. To speak in contemporary terms, its being, unity, and self-sufficiency supervene on the being of its constituents.

In *Notes on metaphysics*, Leibniz goes on to make some other remarks that are consistent with this interpretation of the distinction between a complete being and an aggregate. Leibniz writes:

It is not surprising that the number of all numbers, all possibilities, all relations or reflections are not distinctly understood; for they are imaginary and have nothing that corresponds to them in reality. For example, suppose that there is a relation between a and b, and that that relation is called c; and let a new relation be considered between a and c, and let that relation be called d, and so on to infinity. It does not seem that any one may say that all those relations are true and real ideas. Perhaps only those things are purely intelligible which can be produced; that is, which have been or will be produced.¹⁹³

For Leibniz, the world is constituted of active substances and their states. Relations – and anything else imaginary – are neither real nor intelligible. Aggregates also lack reality and intelligibility: an aggregate has no reality over and beyond the reality of the substances which constitute it.

But what does Leibniz mean when he says that only what is “purely intelligible . . . can be produced”? Although obscure, Leibniz’s point is important and tells us a good deal about his concerns at the end of 1676. There are two ways to approach the point. From the perspective of his *Metaphysics of Substance*, the idea is that, for every substance and substantial state, there is a *ratio* that is in theory intelligible. This is the point of the Substantial Nature Assumption. From the perspective of his *Metaphysics of Divinity*, every product contains the (selected) essence of God and is in theory intelligible. The implication is that there is a neat causal and explanatory hierarchy from God to substance and from substance to substantial state. There is a place for aggregates in this explanatory hierarchy, but only if they are organized and unified by a single emanative mind, which thereby turns the aggregate (that is, collection of substances) into a unified thing.

It is significant that in *Notes on metaphysics*, Leibniz proposes the following thought-experiment: “If it could be supposed that a body exists without a mind, then a man would do everything in the same way as if he did not have a mind, and men would speak and write the same things, with-

193. VI iii 400: Pk 115.

out knowing what they do, just as when they are playacting. But the supposition that the body exists without a mind is impossible."¹⁹⁴ This passage is remarkable in two ways: it seems to embrace (Strong) Parallelism between mind and body where the idea is that the human body acts as it does because it has been prearranged to do so. But it also implies that this sort of perfectly organized body is the *only* sort of body that "exists." Within the general context of the essay, it is reasonable to interpret Leibniz's point here as follows: a collection of substances will exist as an organized thing if and only if they constitute the passive principle in a corporeal substance. If they have their own mind, then they will have a unity and being; otherwise, they will not.

In conclusion, by the end of 1676, Leibniz was clear about the fact that substances are complete beings and that a complete being is one that has its own source of reality, unity, and self-sufficiency and is (in theory) intelligible. He was also committed to the idea that an aggregate lacked this sort of being, but he was unclear about exactly what sort of ontological status to give it. Leibniz's confusion about the precise status of aggregates persists throughout the *Discourse on metaphysics* and correspondence with Arnauld. As he articulates the difficulty in a text written in the mid-1680s:

It is worth investigating in what way a being through aggregation, such as an army or even a disorganized multitude of men, is one; and in what way its unity and reality differ from the unity and reality of a man. . . . The chief point is this: an army accurately considered is not the same thing even for a moment, for it has nothing real in itself that does not result from the reality of the parts from which it is aggregated; and since its entire nature consists in number, figure, appearance and similar things, when these change it is not the same thing, but the human soul has its own special reality so that it can not come to an end by any change in the parts of the body.

A thing can remain the same, even if it is changed, if it follows from its own nature that one and the same thing must have diverse, successive states. Without doubt, I am said to be the same as he who was before because my substance involves all my states, past, present and future.¹⁹⁵

But Leibniz's persistent worries about the status of aggregates should not detract from the fact that his comments in the essays of 1676 tell us a good deal about the intuitions that underlie his distinction between a complete being and an aggregate. I do not mean to suggest that the analysis offered here will solve all the interpretative problems that arise in the mature texts. But against the background of Leibniz's *Metaphysics of Substance* and *Metaphysics of Divinity*, the difficulty of those problems will be diminished. In deciphering Leibniz's mature works, it is helpful to keep in mind the Supreme Being Assumption, the Theory of Emanative Causation, and the Substantial Nature Assumption. The first mark of being is that the thing can be the result of emanation; the second is that the thing have its own source of activity and its own nature. The state of a substance is the result of ema-

194. Ibid.

195. VI iv [B] 555-56. Sleigh makes this point about Leibniz's continued confusion in our "Metaphysics: The Early Period to the *Discourse on Metaphysics*," sect. 4.

nation and in that sense has being. But the state of a substance does not have complete being. Only something that has its own source of unity and activity can be complete. Aggregates fail both tests: they are neither the result of emanation, nor do they have their own source of unity and activity.

Substances, subjects, and truth

In the spring of 1676, Leibniz begins to emphasize the importance of subjects as the bearers of features. This is an important clarification of claims contained in the core metaphysics, and constitutes a step toward the development of his conception of truth. One of the basic presuppositions behind Leibniz's Aristotelian assumptions is that substances are causally and explanatorily self-sufficient, at least with regard to their primary features. Once Leibniz decides to extend the Principle of Causal Self-Sufficiency to all substantial features, he commits himself to the idea that for every feature *f* of a substance *S*, there is a complete *ratio* of *f* in *S*. This implies a truth-conferring relation between a substance and its features in the sense that a feature *f* will belong to *S* (and therefore be truly predicated of *S*) if and only if the nature of the substance contains the complete *ratio* of *f*.

At the basis of Leibniz's theory of truth is the idea that in Sleigh's words, "truth is a matter of relations among concepts."¹⁹⁶ As Leibniz began to refine his views about the relation between the attributes of God and their instantiation in the world in the spring of 1676, he took his first steps toward the development of that idea. In April, he emphasizes the metaphysical importance of a substance as a subject or bearer of predicates and of truth as grounded in the relation between such substances and substantial states. In a passage from *On forms or the attributes of God*, part of which we have seen, he writes:

It is a wonderful fact that a subject is different from forms or attributes. This is necessary because nothing can be said about forms on account of their simplicity; therefore there would be no true propositions unless forms were united to a subject. Thought is not duration, but that which thinks is something that endures. And this is the difference between substance and forms . . . An attribute of God is any simple form."¹⁹⁷

Once Leibniz has hit upon the idea that a substance is a subject in which a modification of the divine attributes has been placed and once he sees truth in terms of the relation between a subject and such attributes, the materials are in place for the concept containment theory of truth.

Let's be clear about the most important metaphysical underpinnings of the theory. For Leibniz in the spring of 1676, it has become perfectly clear that there is a hierarchy of subjects: first, there is God, who is the subject of all

196. See Mercer and Sleigh, "Metaphysics: The Early Period to the *Discourse on Metaphysics*," 108. Much of what I say here is inspired by sect. 4 of the latter, which was written by Sleigh.

197. VI iii 514; Pk 69.

simple attributes; then there are creatures, each of which is the subject of a partial expression of those attributes. As Leibniz explains in *On forms or the attributes of God*: “the essence of God consists in the fact that he is the subject of all compatible attributes” or forms,¹⁹⁸ while it is the nature of created “subjects” to be “conceived through forms.”¹⁹⁹ Before creation, the Supreme Being conceives the fully articulated essence for each individual substance. In the Emanative Creation Story, we described this as a complete concept in God’s mind. In the terminology of 1676, this is a “modification” of the divine essence. But each complete concept and modification is also the set of predicates that will truly be ascribed to the substance, if created. It follows that all the true statements about the active things in the world will be statements about a substance as a subject and its relation to one of the predicates contained in its complete concept. In the case of possible Wanda, her concept includes the predicates ‘thinks about coffee,’ ‘makes coffee,’ ‘spills coffee,’ etc. In the case of actual Wanda, the true statements about her include: ‘Wanda is here thinking about coffee,’ ‘Wanda is here making coffee,’ ‘Wanda is here spilling coffee,’ etc. In such a world, all basic truths about the created world involve the inclusion of a predicate in the concept of a subject. For Leibniz, all the truths about an individual substance are contained in its nature in much the same way that the divine attributes are contained in God. As Leibniz makes the point in a passage from *On simple forms*, part of which we have seen: “all things are in a way contained in all things. But they are contained in a quite different way in God from that in which they are contained in things. . . . Things are not produced merely by combining the forms of God, but along with a subject.”²⁰⁰

Against this metaphysical background, it is not surprising that when Leibniz began to think more about logical matters in his early years in Hanover, he began to think that all truths were a matter of concept containment. For Leibniz, the only (real) properties available in the world are those constructed out of divine attributes. That is, all there is in the world are divine attributes and their combinations. In a striking passage of early 1676 from *On simple forms*, Leibniz acknowledges this point:

There is the same variety in any kind of world, and this is nothing other than the same essence related in various ways, as if you were to look at the same town from various places, or, if you relate the essence of the number 6 to the number 3, it will be 3×2 or $3 + 3$, but if you relate it to the number 4 it will be $6/4 = 3/2$, or $6 = 4 \times 3/2$. So it is not surprising that in a certain way, different things are produced.²⁰¹

In a world in which everything is constituted of combinations of divine attributes, it is not difficult to think of truth in terms of concept containment.

In April 1679, Leibniz produced a series of papers which treat a number of questions related to formal validity and in which he first proposes his concept containment account of truth. Underlying many of these discussions is the idea that an affirmative categorical proposition is true just in case

198. Ibid. 199. VI iii 514–15; Pk 71. 200. VI iii 523; Pk 85. 201. VI iii 523; Pk 83.

the concept of its predicate is contained in the concept of its subject. As Leibniz writes:

it must be considered that every true categorical affirmative universal proposition signifies nothing other than some connection between predicate and subject, in the non-oblique case, which is always meant here, so that the predicate is said to be in the subject, or contained in the subject, either absolutely and regarded in itself, or at any rate in some instance. That is [seu], the subject is said to contain the predicate in the fashion stated. This is that the notion of the subject, either in itself or with some addition, involves [involvat] the notion of the predicate.²⁰²

Although the passage begins with a version of the concept containment account of truth restricted to universal propositions, by the end of the passage the way is cleared for a generalization of the concept containment account of truth to all categorical affirmative propositions. As Sleight has summarized the point: “Leibniz’s logical papers from this period make it plausible to ascribe to him the view that an adequate theory of truth for categorical affirmative propositions will settle the truth conditions for all propositions.”²⁰³

A number of questions arise concerning the development of the concept containment theory of truth in the late 1670s: what is the precise relation between it and his other doctrines,²⁰⁴ to what extent did the writings of other seventeenth-century logicians (e.g., Pascal) influence him, and what metaphysical importance did Leibniz think it had? My brief discussion here leaves these and other important questions unanswered. Nor do I think that it will be possible to construct adequate replies to such queries until the recently published papers from the period have been studied thoroughly. But despite the important scholarly work that remains to be done, the interpretative story told here does solve a number of problems that have plagued scholars for decades. As I noted in the Introduction to this book, the Russell–Couturat account of Leibniz’s philosophy had an enormous influence on subsequent scholars. According to Russell, Couturat, and their followers, the theory of truth forms the bedrock of Leibniz’s metaphysics. It is an important consequence of my interpretation that as we can now clearly see, the theory turns out to be the very last major doctrine of the core metaphysics to evolve, and itself developed out of the Metaphysics of Substance.

For the sake of thoroughness, let’s be clear about the fact that between 1672 and 1679, the core metaphysics remains fundamentally the same although Leibniz develops the details of his views in the ways noted here. In

202. VI iv [A] 197. For the other logical papers of April 1679, see VI iv [A] texts N. 56, 58, 59, 60, 61, 62, and 63.

203. Mercer and Sleight, “Metaphysics: The Early Period to the *Discourse on Metaphysics*,” 108.

204. Although previous commentators have not recognized the early development of Leibniz’s core metaphysics, his early uses of the Principle of Sufficient Reason have been noted. This has generated speculation about the relation between it and the development of the theory of truth. For an analysis of this relation, see Fabrizio Mondadori, “Reference, Essentialism, and Modality in Leibniz’s Metaphysics.”

particular, he develops his doctrine of traces and his theory of truth, his theory of expression, and his distinction between complete and incomplete beings; and he makes each mind-like substance a mirror that reflects at each moment of its eternal existence the past, present, and future states of the world. By 1679, Leibniz's core metaphysics contain these claims and doctrines.

5. Matters of interpretation

In this chapter, we have seen that during his years in Paris, Leibniz remains committed to the Metaphysics of Method attributed to him in chapter 1, to the Metaphysics of Substance described in chapters 2 through 4, to the Metaphysics of Divinity articulated in chapters 5 through 6, and to the metaphysical doctrines presented in chapters 7 through 9. Although his views evolve during the period 1672–79, he does not diverge from the philosophical commitments of the pre-Paris period. In short, there is abundant evidence that Leibniz developed the central part of his philosophy many years earlier than scholars have previously thought.

Before concluding my discussion of this last phase in the development of the core metaphysics, it will be helpful to confront an obvious question: what would constitute evidence that my interpretation of Leibniz's development is wrong? This is a particularly important question since a number of recent scholars have used Leibniz's writings of the middle and late 1670s to argue for interpretative conclusions contrary to mine (and to one another). According to some commentators, Leibniz has no consistent philosophy until 1679, when he rehabilitated substantial forms and created his mature metaphysics. According to others, he was an occasionalist for much of the period. Still others have claimed that he toyed with (what they call) Spinozistic pantheism for at least a part of the 1670s. The striking thing about these interpretations is that each is based on an impressive amount of textual evidence. Why doesn't this textual material seriously undermine my interpretation?

The vast majority of the disputable passages turn out to be unproblematic when they are seen in their proper context. Let's consider briefly the three most prominent interpretations that have recently been put forward and that contradict my own. The first is Robinet's argument to the conclusion that 1679 marks the birthdate of Leibniz's mature philosophy. According to Robinet, it was in the summer of that year that Leibniz decided to "rehabilitate the substantial forms." Robinet's conclusion is based on an impressive survey of Leibniz's writings, beginning with the thesis of 1663. Due to the textual breadth of Robinet's study and to the subtlety of much of his analysis, most subsequent scholars have accepted 1679 as the earliest possible commencement of Leibniz's mature thought. For example, Adams credits Robinet for the "pinpointing" of this "momentous decision."²⁰⁵ Be-

205. Adams, *Leibniz*, 236, n. 40. See also Lodge, "Leibniz's Commitment to Pre-established

cause the details of Robinet's interpretation are elaborate, a general overview of his argument must suffice here.²⁰⁶ In rough terms, Robinet correctly attributes to the *Confession of nature against the atheists* and related texts of the late 1660s what he calls "restrained occasionalism," but then mistakenly assumes that this position persists until the Paris years.²⁰⁷ Like Kabitz and many other serious scholars of the 1660s, Robinet ignores the importance of the letters and essays sent to Johann Friedrich as well as texts such as *On the incarnation of God or on hypostatic union* and the *Studies on the universal characteristic*. That is, Robinet's textual base is broad, but it is not broad enough. He claims that Leibniz has "put aside" substantial forms in Paris and only reintroduces the terminology of 'forms' in 1676.²⁰⁸ Robinet and his followers take the following passage from a letter to Johann Friedrich of late 1679 to be "momentous:"

There is another important thing in my philosophy which will give it access to the Jesuits and other theologians. This is my restoration of substantial forms, which the atomists and Cartesians claim to have exterminated. It is certain that without these forms and the distinction that exists between them and real accidents, it is impossible to explain our mysteries. For if the nature of body consists in extension, as Descartes claims, it involves a contradiction, beyond all doubt, to maintain that a body may exist in many places at once. But all that has been said about the essence of body until now is unintelligible, and it is not surprising that substantial forms have been taken for chimeras by the most able minds. What I shall say about them, among other things will instead be as intelligible as anything that the Cartesians have ever proposed about other matters.²⁰⁹

Given the importance of Leibniz's early letters to Johann Friedrich on matters related to the activity and nature of substances, it is ironic that this letter stands as one of Robinet's most important pieces of evidence of the revolution in Leibniz's thought in 1679. But I can see nothing new here. While it is significant that in the late 1670s, Leibniz once again returns to the vocabulary of 'substantial form,' the passages that Robinet cites contain nothing more than the claims of Leibniz's core metaphysics.²¹⁰ Like

Harmony" sect. III. Kulstad is one of the few scholars not to swallow Robinet's conclusion whole, and has offered convincing alternative readings of the most important passages on which Robinet builds his point. See "Causation and Preestablished Harmony," sects. II-III. Although in the end I disagree with Kulstad's conclusion that there is evidence of occasionalism and no evidence of Preestablished Harmony in the 1670s, one result of Kulstad's careful analysis is consistent with mine, namely, that when we apply a sharp analytic eye to many of Leibniz's key passages, we find that their author is neither explicit nor clear about some of his most basic views.

206. In notes scattered throughout chs. 1-4, I have attempted to identify those points of disagreement between Robinet's interpretation and my own.

207. Robinet, *Architectonique disjonctive*, esp. 128-138. 208. *Ibid.*, 179-81; *passim*.

209. II i 490: L 261.

210. For the list of passages on which Robinet bases his claim, see *Architectonique disjonctive*, sect. 5.9. As far as I can tell, none of these contains anything more than an account of some of the main elements of Leibniz's core metaphysics. What remains to be explained, however, is what exactly might have motivated Leibniz to return to his earlier Aristotelian

the quoted passage, most of Robinet's textual evidence is little more than a summary of the views articulated in *On the true method in philosophy and theology* of 1673–75 and the various pre-Paris essays discussed in chapters 4, 7, and 8.

A second interpretative position that has recently gained popularity and that contradicts my own concerns Spinozistic "pantheism." For decades, commentators have attributed forms of Spinozism and pantheism to Leibniz on the basis of passages of the sort quoted in sections 2 and 3 above. Because Leibniz heard about Spinoza's *Ethics* in the winter of 1675–76, because he uses Spinozistic terminology in some of the essays of 1676, and because some of his comments reek of Spinozism, it has often been assumed that he was deeply influenced by the thought of Spinoza, and it has sometimes been claimed that he was himself a Spinozist for a while in the 1670s.²¹¹ In 1900, Russell makes the point with characteristic verve: Leibniz "tends with slight alterations of phraseology, to adopt (without acknowledgement) the views of the decried Spinoza."²¹² More recently, Adams has argued that Leibniz toyed with pantheism in 1676, where the latter is taken to be the denial of the "ontological externality of created things."²¹³ Against the background set in chapters 5 and 6, the specter of pantheism dissolves. In fact, most Platonists in the history of philosophy would have found Adams' definition of pantheism utterly baffling. For them, there is *nothing* external to God and, moreover, the ontological dependence of creatures in God is theologically exactly right. In this context, we should remember that Leibniz's mentor, Jakob Thomasius, had written a long book in which he describes in detail the heresies of the Stoics (many of whom describe the world in terms that could be called pantheistic) and

vocabulary with such intensity at this time. Since many of the relevant passages are written to conservative thinkers like Johann Friedrich and Conring, and since they often touch on theological topics, the shift in terminology might simply be due to a new-found interest in proclaiming the theological benefits of his core metaphysics. Now that the Academy edition of these textual materials has been published, it is possible to answer such questions.

211. In the winter of 1675–76, Leibniz heard about the unpublished manuscript of Spinoza's *Ethics*, and in the autumn of 1676 he met with Spinoza and saw a copy of the manuscript. For a century, there has been a good deal of speculation about the influence that Spinoza's *Ethics* might have had on Leibniz's philosophical development. For an account of Leibniz's relation to the *Ethics*, see Kulstad, *Leibniz, Spinoza, Tschirnhaus: Multiple Worlds, Possible Worlds*. My interpretation of Leibniz's relation to Spinoza is presented in greater detail in "Leibniz and Spinoza on Substance and Mode." Also see Detlev Pätzold's helpful *Spinoza-Aufklärung-Idealismus*, esp. ch. 3.
212. Russell, *A Critical Exposition*, 5.
213. Adams, *Leibniz*, 128. Independently of Adams, Kulstad has also argued for Leibniz's pantheism. Although I disagree with him, I find Kulstad's argument more subtle and convincing than the one put forward by Adams. See Kulstad, "Did Leibniz Incline toward Monistic Pantheism in 1676?" In fact the use of the term 'pantheism' is anachronistic. As the *Oxford English Dictionary* and the various seventeenth-century philosophical lexicons make clear, the term was not used in the seventeenth century. That is, neither Spinoza nor his contemporaries thought of him as a pantheist. For a discussion of the concept, see Michael P. Levine, *Pantheism: A Non-Theistic Concept of Deity*.

noting exactly how Platonist theism differs from it.²¹⁴ Leibniz was thoroughly acquainted with such dangers and fully aware of the significant differences between heretical and non-heretical accounts of the relation between God and creatures. In short, to claim that these passages from Leibniz's Paris writings imply pantheism is to misunderstand a major tradition in the history of philosophy. Once we place Leibniz's comments within the Platonist tradition to which they belong, they prove to be no more "pantheistic" than similar passages in the texts of Augustine, Philo of Alexandria, Pico della Mirandola, Thomasius, Scherzer, Alsted, and a hundred other philosophers who share Leibniz's Platonist leanings.

Furthermore, for every passage in Leibniz's writings that smacks of "pantheism," there are several others (sometimes in the very same text) that suggest otherwise. A striking case is the essay, *Notes on science and metaphysics*, of March 1676 in which Leibniz neatly summarizes the Platonist position about the relation between God and creatures: "God does not form part of things, rather, he is their principle."²¹⁵ For a more complicated example, let's consider an account that Leibniz offers of the relation between the Supreme Being and its products in *On forms or the attributes of God* of April 1676. First, Leibniz writes: "any property or affection of God involves his whole essence. . . . When all the other attributes [of God] are related to any one of them, there result in it modifications, whence it happens that the same Essence of God is expressed as a whole in any kind of World, and so that God manifests himself in infinitely many modes."²¹⁶ Adams has taken this passage as evidence of Leibniz's "pantheistic" tendencies. As he puts it: "What is striking here is that Leibniz is *not* moved to speak clearly of the world as an additional 'result' *outside* the divine being."²¹⁷ But Leibniz *could not* have been so moved. Nor does *On forms or the attributes of God* leave the point unexplained. In the words that immediately follow the passage just quoted, Leibniz is explicit about exactly how he understands the ontological dependency between the divine essence and its products. He writes in a passage, part of which we have seen:

Whatever is conceived per se, its cause cannot be understood. For an effect is conceived through its cause, from which it is evident that if something exists through itself, and also if other things exist, then it exists. The correct way of considering the matter is that forms are conceived through themselves; subjects and the fact that they are subjects are conceived through the forms. But that whose modifications depend on the attributes of another, in which all its requisites are contained, is conceived through another. That is, it cannot be perfectly understood unless the other is understood. Those things are connected of which the one cannot be understood without the other. Requisites are those things which are connected with one another.²¹⁸

214. Thomasius, *Exercitatio*; see my discussion in ch. 5, sect. 8. Also notice that throughout his Paris years, Leibniz continues to be interested in and to take copious notes on Platonists like Kircher, Capella, Plato, and others. See VI iii 189–213, 283–311.

215. VI iii 392: Pk 45. 216. VI iii 514: Pk 69–71.

217. See Adams, *Leibniz*, 128; Adams' emphasis. 218. VI iii 514–15: Pk 71.

In this passage, Leibniz offers a precise statement of the relation between an emanative cause and its product: the latter depends on the former, is conceived through the former, and cannot be understood without it. He also indicates exactly why this kind of relation is theologically good: if a creature were fully independent of God, then an understanding of its nature would not lead to an understanding of its divine cause. That is, for Platonists like Leibniz, ontological dependence is exactly what is desired.²¹⁹ As Augustine exclaims to God in Book I of the *Confessions*: “I would have no being if I were not in you.” Or, in Scherzer’s words, God “is that through which things live” and “the unity in the multitude.”²²⁰

Concerning Leibniz’s apparent occasionalism in the 1670s, the same sorts of explanations can be made. For over a hundred years, scholars have wondered about the influence of French occasionalists like Nicolas Malebranche and Arnold Geulincx, and they have pointed to a number of passages in Leibniz’s texts of the 1670s as evidence of his occasionalist tendencies. Although this is a much more plausible interpretative stance than the claims of pantheism, in the vast majority of cases, the passages that are used to support Leibniz’s occasionalism are either compatible with my interpretation or can be explained as rhetorically motivated. While I agree with French scholars like Robinet and Belaval that Leibniz was keen to digest the occasionalism served in Paris, his primary interest was to learn enough about this causal alternative so as to engage its prominent practitioners.²²¹ It is important to note how very similar in general terms the occasionalist position is to Leibniz’s, especially when set against the traditional

219. The most significant evidence offered for the thesis that Leibniz briefly flirted with Spinozism in 1676 is the following passage from a text of November: “It can easily be demonstrated that all things are distinguished, not as substances (i.e., radically) but as modes. This can be demonstrated from the fact that, of those things which are radically distinct, one can be perfectly understood without the other; that is, all the requisites of the one can be understood without all the requisites of the other being understood. But in the case of things, this is not so; for since the ultimate reason of things is unique, and contains by itself the aggregate of all requisites of all things, it is evident that the requisites of all things are the same. So also is their essence, given that an essence is the aggregate of all primary requisites. Therefore, the essence of all things is the same, and things differ only modally, just as the town seen from a high point differs from the town seen from a plain. If only those things which are separated are really different or which one can perfectly understand without the other, it follows that no thing really differs from another, but that all things are one, just as Plato argues in the *Parmenides*” (VI iii 573: Pk 93–95). While there seems little doubt that Leibniz here uses Spinozistic terminology, the point seems fundamentally the same as that in the passage just quoted: creatures are not radically different from one another because they depend on God; because the One itself is immanent in each creature and in the totality of creatures, it follows (as Emanative Harmony claims) that all things are one.

220. For Augustine, see *Confessions* I, ii; for Scherzer, see *Vade Mecum*, 52–53; for similar comments about the immanence of God by other prominent Platonists, see ch. 5, sect. 4.

221. Robinet, *Malebranche et Leibniz: relations personnelles*, passim; also Belaval, *Initiation*, 133ff. For a particularly clear account of the arguments for Leibniz’s early occasionalism and for citations to other literature on this topic, see Kulstad, “Causation and Preestablished Harmony.”

scholastic account of nature: for the standard occasionalist, only the Supreme Being is the true cause of things and our perceptions are given us by God. Where the occasionalists and Leibniz differ is in the details, although in this case the details are everything. For the former, the Supreme Being is the immediate cause of the activity in nature: God causes Wanda's arm to move on "the occasion" of her willing it to move. For Leibniz, the Supreme Being is the cause of everything only in the sense that it is their principle or emanative source; created beings are essentially active things, so that the source of all natural activity lies with them.

However, because of the similarity between occasionalism and Preestablished Harmony at the most general level and because of the popularity of the former, it would not be surprising to find Leibniz trying to engage these philosophers on their own terms. Two letters that Leibniz wrote to Malebranche, one of the foremost French occasionalists, afford a nice view of his Rhetoric of Attraction. In January 1679, Leibniz gives the author of *The Search After Truth* some advice: "I wish you had not written solely for Cartesians, as you yourself claim, for all sectarian labels should be odious . . . to a lover of truth. Descartes has said some fine things; his was a most penetrating and judicious mind, but it is impossible to do everything at once." After proclaiming some of the virtues (and vices) of Descartes, he commends Malebranche for his insightful criticism of the Cartesian conception of body, but insists: "I believe that you have gone only halfway and that still other consequences can be drawn than those which you have made. In my opinion it follows that matter is something different from mere extension, and I believe, besides, that this can be demonstrated."²²² Although Leibniz does not tell Malebranche exactly what the *other* half is, scholars like Robinet have correctly inferred that the unstated position is Preestablished Harmony. In a letter of early summer 1679, Leibniz explains to Malebranche:

I approve most heartily these two propositions which you advance: that we see all things in God and that strictly speaking bodies do not act on us. I have always been convinced of this for important reasons which seem to me indisputable and which rest on certain axioms which I do not yet see used anywhere, though they could be most serviceable in proving some other theses no less important than those I have just mentioned.²²³

This is a paradigm case of Leibniz's Rhetoric of Attraction: he compliments his interlocutor, describes his own position in a way that highlights their similarities, and then suggests that his own views afford a slight advantage. That Leibniz hopes to engage Malebranche is obvious; that he sees precisely what they have in common is clear.

222. II i 455: L 209. Robinet makes much of this letter, and takes it as evidence that by 1679 Leibniz had developed Preestablished Harmony. See *Malebranche et Leibniz*, ch. 2.

223. II i 472: L 210. It is noteworthy that, according to Leibniz, he has "always" believed these two propositions. As he so often does in his autobiographical sketches, he is here offering an overly simple account of his development.

Within the context of his Rhetoric of Attraction, the papers that Leibniz wrote in the mid- and late 1670s and that suggest occasionalism no longer seem so problematic. While it is surely true that comments such as “we see all things in God” are consistent with occasionalism, they are also consistent with Leibniz’s claims about Emanative and Reflective Harmony. The most significant evidence for Leibniz’s occasionalism occurs in a fascinating text of October 1676. It is ironic that Leibniz wrote this important dialogue on motion, entitled *Pacidius to Philalethes*, on route to Hanover via England and Holland. Scholars have taken the following passage to prove Leibniz’s occasionalism at the time:

Therefore, what moves and transfers the body is not the body itself, but a superior cause which by acting does not change, which we call God. From which it is clear that a body cannot even continue its motion of its own accord, but stands in continual need of the impulse of God, who, however, acts constantly and by certain laws in keeping with his supreme wisdom.²²⁴

There is no doubt that Leibniz’s language here is thoroughly consistent with that of the occasionalist. But what he says before and after this passage suggests that things are more complicated than they first appear. By way of introducing this comment, Leibniz writes, for example: “I am of the following opinion: there is no portion of matter that is not actually divided into further parts, so that there is no body so small that there is not a world of an infinity of creatures within it.” In the dialogue, one of the interlocutors is duly impressed by this position and proclaims that “as far as I know, it has not been adequately considered before now.” Leibniz’s spokesperson then proudly announces that this position is “the only opinion worthy of the greatest author of things, who bequeathed us nothing sterile, nothing fallow, nothing unadorned.”²²⁵

An obvious question arises at this point concerning the occasionalism of the dialogue: if God is the direct cause of the motion in bodies, then what exactly are all these creatures *doing* in the world? In a passage that is both perfectly consistent with occasionalism and thoroughly in keeping with the Theory of Corporeal Substance, Leibniz writes:

For motion stops altogether, and does not last for any time however small, but at each moment the lifeless is resuscitated by the work of a superior cause. In fact, since God does everything in the most perfect way, from this a use for the axiom *that nothing is without a reason* returns as if by postliminy. For the forms [formas] of changes which God originally chose in some stretch of time, those he will not change without a reason.²²⁶

224. VI iii 567. Richard Arthur was kind enough to let me see the manuscript of his *Labyrinth*. I have benefited from his translation of this and other works. For his views on Leibniz’s occasionalism in the dialogue, see *Labyrinth*, Introduction. In a recent paper, Lodge has argued that in the Paris years, “Leibniz was exploring a number of different options regarding substantial causation” and that one of the most prominent of these is occasionalism. See Lodge, “Leibniz’s Commitment to Pre-established Harmony.”

225. VI iii 565-566. 226. VI iii 568.

This is a fine example of Leibniz's rhetorical subtlety. What he says in his dialogue on motion is perfectly judged to engage the occasionalist and yet is thoroughly consistent with his own views. Once we realize that the source of the required "resuscitation" is not the Supreme Being itself but "the forms," then the underlying metaphysics of the dialogue is rendered transparent. While it is true that bodies need to be "resuscitated" and motion "trans-created,"²²⁷ and while it is true that God is the constant cause of everything, the world is chock full of creatures that do the dirty work for their "superior cause." Leibniz offers the following summary of "the fruit of this demonstration." He writes: "that action is something very different from change, and that a thing can act without undergoing reaction, a fact that is in turn of great utility in divinity." That is, it is the mind-like forms that underlie change, act without themselves changing, and make the world "worthy of the greatest author of things."²²⁸

Before I turn to the conclusion of Leibniz's remarkable dialogue, it will be helpful to return to the question with which I began this section: what *would* constitute evidence that my interpretation of Leibniz's development is wrong? As I have suggested here, what will *not* disprove my interpretation is a short list of passages which are plucked from the vast writings of the 1670s and which seem to contradict the core metaphysics. It is no doubt true that it is possible to string together a list of passages which imply any number of doctrines contrary to Leibniz's underlying views. And it is no doubt true that – sometimes through carelessness and sometimes through (apparently) intentional concealment – Leibniz himself encourages confusion. But I see no reason to believe that he was either a Spinozist, occasionalist, atomist, skeptic, or anything other than a brilliant conciliatory eclectic. Once we stand back and survey the vast expanse of Leibniz's erudition and the full array of his interests during the time, we should not be surprised to discover among his many papers, and especially his personal notes, a number of vague and misleading comments or a tendency to try out the terminology of the other side. A few recalcitrant passages prove little except that the great Leibniz himself sometimes suffered from befuddlement, and perhaps a mild form of philosophical paranoia. Given his conciliatory eclecticism, it would be surprising that in the face of the many new ideas that confronted him in Paris, he did not try out some new terminology here or there. What is much more important than a few passages that smack of Spinozism or occasionalism or atomism or skepticism is the fact that when Leibniz arrives in Hanover in 1676 and when he wrote the *Discourse on metaphysics* in 1686 and the *First truths* in 1689, he accepted the same metaphysical doctrines which he carried with him to Paris in March 1672.

227. Leibniz first uses this term in an essay on infinite numbers in the first half of 1676. See VI iii 500. He uses it in this dialogue where he claims that it is a wonderful new way to describe the constant recreation of motion. Having coined the term here, he does not use it in his philosophical writings of 1677–June 1690. See the index of VI iv.

228. VI iii 571.

But what then *would* count as evidence against my interpretation? The short answer to this question is: any interpretation that takes as wide a textual scope as does mine. Because of the sheer volume of Leibniz's writings and the difficulties of his texts, it is not surprising that scholars have tended to string together passages from his writings and then tell an interpretative story based on them. Nor is it shocking that some commentators have overlooked important essays, while others have discarded sections of texts that seem odd.²²⁹ As students of Leibniz, we cannot let ourselves be satisfied either with lists of quotations or with a few familiar texts. He did not limit his energies in this way and neither should we. Nor can we cavalierly cast entire letters and texts aside because they strike us as odd. As it turns out, some of Leibniz's views are *extremely* odd from our philosophical perspective. But their oddity does not make them any less central to his thought. My methodological strategy differs from previous accounts of Leibniz's early thought in that while it surely cannot explain every single passage, it attempts to offer a story consistent with every single text. My interpretation will not be disproven either by a list of passages that suggest occasionalism or a string of quotations that smack of Spinozistic "pantheism." For each such passage and quotation, I propose that we return the passage to the text and see the text as a part of Leibniz's grand philosophical project. In the vast majority of cases, the problem dissolves as soon as the recalcitrant passage is placed in the context of Leibniz's *Metaphysics of Method, Substance, and Divinity*. In summary, what would constitute significant evidence against the interpretation offered here is a different account that tells a plausible story based on the entire range of theological, ethical, physical, and metaphysical writings of the period.

Finally, I would like to display the extraordinary conclusion to Leibniz's dialogue *Pacidius to Philalethes*. As its title might suggest, Pacidius has taken part in a philosophical exchange whose details he describes for the benefit of a friend. In its conclusion, the description of the discussion reads as a morality play, where the warring factions are the mechanical philosopher who ignores God and is too concerned with "sensible things" and the Godly theologian whose "zeal for the divine glory" has encouraged him "to shrink from reason."²³⁰ Peace is forged by the marvelous proposals of Leibniz's spokesperson who has revealed "the grandeur of reality itself." As the mechanical philosopher exclaims about the "unexpected solution" to their puzzle about motion:

229. For example, nowhere in his lengthy discussions of Leibniz's views about God and substance does Adams cite or use *On the incarnation of God*, a text to which I devoted much of ch. 4. See Adams, *Leibniz*, passim, and Index of Leibniz Texts Cited. Or to give another kind of example, Beeley considers the letter to Johann Friedrich of May 1671 to be one of Leibniz's "exoteric writings" and its proposals about a core of substance to be one of those philosophical ideas "which pretty quickly land in the waste-bins." See Beeley, "Response," 74–75. But as the discussions in chs. 7 and 8 show, the letter of 1671 contains much that is important and as we have noticed in sect. 2 here, Leibniz endorses the view of his 1671 letter in an essay of 1676 (see VI iii 478–79).

230. VI iii 570.

I certainly hold it in . . . admiration. And as a soldier accustomed only to sensible things, I have never . . . suspected that such clear and firm demonstrations could be achieved in matters that are abstract and remote from the imagination. For my part I was for a long time expecting different things from this meeting, namely, laws of motion, and the mechanical causes of powers. . . . Now I would not want to replace anything that you have said with Algebra and Mechanics, nor would I be disinclined to listen to metaphysics.²³¹

As Leibniz's spokesperson explains, in order "to produce the truth," it is necessary for the philosopher "to acknowledge divine power and greatness; nor should he be a stranger to revelation or to the things we call miracles or the mysteries." The result will be virtue, wisdom, and the recognition that there is nothing more important than "the worship of God . . . and the contemplation of eternity. For if the soul in us is immortal, the few years of life we have ought to seem of very little importance to us, except insofar as we may believe that the effects of our actions extend into the future." It is to this end, Leibniz's spokesperson insists, that we must seek "the most perfect knowledge of nature." Not only has God "created things from nothing, but also creates and resuscitates them all the time." In conclusion, he proclaims: "For my part I confess that my intellect has exulted in the power of these reasonings, and I congratulate philosophy, which finally looks as though it will return with piety to grace; with which it has seemed to be in too little agreement, not through any fault of its own, but as a result of . . . thoughtless judgments." When the proper study is made of motion, instead of "crass" materialism, "certain metaphysical mysteries of a truly spiritual nature will be found contained in it; and the secret force inside us will appear, in which, inflamed with love and affection, and elevated by its careful meditation, the soul may take delight."²³² But what exactly are these "metaphysical mysteries of a spiritual nature"? In the startling final lines of the text, Pacidius explains:

When the old man said these things with such remarkable piety and zeal . . . , we all caught some of the fire, and vying with him in pouring forth divine praise, we excited ourselves to a zeal so favorable, that compared to it all others seemed as nothing, since the only way they could be estimated would be by comparing them with that state of the soul in which all happiness is ordained. But also a consensus of wisdom appeared, and Theophilus introduced us to the mysteries of the theologians, and Gallutius to many of the secrets of the Hermeticists and Pythagoreans, in confirmation of its truth. . . . Finally, when this discussion had drawn on long into the night, and we had agreed not only to another day's discussion, but also on some definite rules of communal study, having given and received a secret trust, for certain words were said back and forth which cannot be repeated since not everyone seems worthy of them and surely there are few who seem mature and ready, after a very long time we finally finished our discussion. The next morning, while my soul was glowing with the recent memory, I took up my pen and, for you as much as for myself, I wrote this.²³³

231. VI iii 569. 232. VI iii 570.

233. VI iii 571. I have benefited greatly from Arthur's translation of this complicated text.

Once again, we discover that underlying Leibniz's thought is the two-part assumption that the truth will be constructed out of the great past and present philosophers and that because most readers are not sufficiently "mature and ready," he must present these "metaphysical mysteries" by means of carefully controlled suggestive remarks. It is no wonder that the origins and development of Leibniz's metaphysics have remained hidden for so long.

Conclusion: the truth behind the *First truths*

This book offers the first systematic study of Leibniz's intellectual odyssey from his student days in Leipzig to the development of one of western philosophy's great metaphysical systems. We have discovered much in the early works that is enlightening and surprising. In my Introduction, I claimed that one of the results of this historical and philosophical narrative would be a greater *understanding* of Leibniz's mature philosophy. I promised that the developmental story offered here would help us grasp the truths behind the *First truths*. As I see it, I have fulfilled that promise. Because the fundamental truths that underlie the mature thought just *are* the Aristotelian and Platonist assumptions articulated in chapters 2 through 6 and because Leibniz's mature metaphysics fundamentally *is* the core metaphysics presented in chapters 7 through 10, the analysis of the previous chapters turns out to be an examination of the central doctrines of the mature philosophy.

Let me be perfectly clear. I am claiming that the Metaphysics of Method, the Metaphysics of Substance, and the Metaphysics of Divinity constitute the background assumptions and implicit premises of Leibniz's mature writings and, moreover, that the various tenets that constitute the core metaphysics are interwoven throughout the fabric of Leibniz's mature thought. I said in the Introduction that because the mature Leibniz is rarely explicit about his underlying beliefs, we would have to turn to the early texts in which his basic views are closer to the surface and easier to discern. Now that we have excavated and articulated those philosophical ideas, we are able to discern them throughout the mature writings. Because Leibniz's early commitments just are the unspoken assumptions of the later writings, they offer constant help in deciphering the complications of those texts.

1. Metaphysics of Method

T.S. Eliot was one of the great poets of the twentieth century. But he was also a student of Leibniz. Eliot wrote two articles on Leibniz for the 1916 issue of *The Monist* in which he approaches Leibniz's thought from a perspective not unlike my own. According to its introduction, this issue of *The Monist* was "devoted to a commemoration of the scientific and philosophical work of Leibniz and its influences on modern thought." In Eliot's articles, there are a number of delightful and astute observations. Although he accepts the interpretation promulgated by Kabitz and others according to which Leibniz abandoned scholasticism for mechanical atomism before

adopting his own monadism in the 1680s, Eliot acknowledges that “Leibniz . . . seldom spoke ill of a dead philosopher” and “always praises the schoolmen.”¹ Although Eliot does not recognize the theory of emanation underlying the system and therefore takes more seriously than he should some of the problems that Russell (with whom Eliot studied) ascribed to our eclectic German, Eliot recognizes two features of Leibniz’s philosophical personality which, as I have documented, increased the obscurity of his texts. As Eliot rightly sees, “there is no philosopher with whom the problem of sources is less important than with Leibniz. The fact that he could receive stimulation from such various sources and remain so independent of the thought of his time indicates both the robustness and the sensitiveness of genius.” Eliot delightfully summarizes the point: “Leibniz’s originality is in direct, not inverse ratio to his erudition.”²

But Eliot also identifies another source of difficulty for scholars: “More than multiplicity of influences, perhaps the multiplicity of motives and the very occasional reasons for some of Leibniz’s writings, make him a bewildering . . . writer. The complication of his interests in physics, his interests in logic, and his equally genuine interest in theology, make his views a jungle of apparent contradictions and irrelevancies.”³ When we add to this chaotic mixture my claim about Leibniz’s commitment to philosophical concealment and rhetorical self-control, we should no longer be surprised that it has been so difficult to get to the bottom of Leibniz’s thought.

Once we know to look for it, there is abundant evidence in the mature writings of Leibniz’s *Metaphysics of Method*. He constantly calls attention to his conciliatory tendencies and proclaims his use of ancient thought. In the *Discourse on metaphysics*, for example, he is explicit about his debt both to Plato and Aristotle. Concerning the former, Leibniz uses Platonist terminology throughout the essay and emphasizes the insights of Plato himself. In section 14, Leibniz talks about “the emanation” of God and admits the close relation between what I have called Emanative and Reflective Harmony; in sections 20 and 23, he applauds Plato’s anti-materialism and general epistemology; and in section 27, he agrees with the Platonist conception of the soul. About Aristotelianism, in sections 10–13, Leibniz insists that the scholastics have a good deal to offer and that the Aristotelian notion of form is the basis for the true conception of substance as well as for an understanding of “the wonders of God.”

Leibniz is also frequently explicit about his intellectual debts and conciliatory goal in the letters, essays, and notes of his mature period. A striking

1. T.S. Eliot, “The Development of Leibniz’s Monadism,” 537. Sleigh refers to this article in the conclusion of his book. According to Sleigh, it was reprinted as Appendix I of *Knowledge and Experience in the Philosophy of Bradley*, which is a revised version of Eliot’s dissertation. As Sleigh notes, Eliot did not defend the thesis at Harvard; nor as far as I know did he publish on Leibniz any more than this article and the one mentioned below. See Sleigh, *Leibniz and Arnauld*, 218.
2. Eliot, “Leibniz’s Monads and Bradley’s Finite Centers,” 567–68.
3. *Ibid.*, 568.

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case of his forthrightness appears in the *Specimen of Dynamics*, an important publication on physical topics. In this text of 1695, he applauds the use in his time of Plato, the Stoics, and other ancients and says that he intends to do the same for the Aristotelian philosophy in physics. He writes:

This plan of study seems to me to be the one best suited both for judiciousness in teaching and for the benefit of students. It prevents us from appearing more eager to destroy than to build. . . . [By] restraining the whim of the sects . . . and by establishing doctrines of certainty, it enables the human race, at long last, to advance unhaltingly toward greater heights. . . . For if you just omit the harsher things they say against others, there is usually much that is good and true in the writings of the distinguished ancients and moderns, much that deserves to be brought to light.⁴

Or, in a letter written at the end of his life, he writes: “I have tried to uncover and unite the truth buried and scattered under the opinions of all the different philosophical sects, and I believe I have added something of my own which takes a few steps forward. . . . I flatter myself to have penetrated into the harmony of these different realms.”⁵ In short, there is ample evidence in the mature writings of Leibniz’s *Metaphysics of Method*.

But this fact itself gives rise to an obvious question: if Leibniz was such a committed eclectic, then why doesn’t he just describe and explain the ideas taken from his sources? Leibniz is reticent to articulate his position because, as he wrote in the dialogue *Pacidius to Philaethes*, “few seem mature and ready.”⁶ In chapter 1, I attributed to Leibniz a rhetorical strategy whose fundamental goal was to engage his contemporaries so as to nudge them toward the truth. We have seen abundant evidence of this Rhetoric of Attraction in the early texts: he often carefully describes his views so as to make them sound as similar to his interlocutor as possible while at the same time giving his opponent reasons to take seriously some of the other details of his position. By such means, Leibniz hoped to lead wayward souls to the philosophical truth. We have also noticed cases of Leibniz’s motivating the same principle in a variety of ways and expressing the same claims in different terminology. What is explained in terms of final causes for Thomasius’ sake is described differently for Oldenburg’s. What is “a flower of substance” in a letter to Johann Friedrich of May 1671 is “an atom” in some papers of 1676. Within this context, the chameleon-like quality of Leibniz’s autobiographical descriptions are not difficult to explain. As we have seen several times over, the presentation of his motivations and views is often perfectly honed for his present philosophical goal.⁷

There is abundant evidence of the Rhetoric of Attraction in his mature

4. GM VI 234; AG 118f.

5. G III 606; L 654. Part of this passage was quoted at the end of ch. 3.

6. VI iii 571.

7. Before we conclude on the basis of these facts that Leibniz was a conniving, dishonest manipulator of princes and princesses, it will be helpful to remind ourselves of how common it is for us to mold the presentation of our projects to fit the specifics of the grant for which we are applying or the journal for which we are writing.

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writings. Consider, for example, Leibniz's comments in the *New essays*, a text written more than forty years after he walked in the Rosental woods. Leibniz explains in a passage part of which we have seen:

This system appears to unite Plato with Democritus, Aristotle with Descartes, the scholastics with the moderns, Theology and morality with reason. Apparently it takes the best from all systems and then advances further than anyone has yet done. . . . I find the true principles of things in the substantial unities which this system introduces, and in their harmony which was preestablished by the primary substance. I find in it an astounding simplicity and uniformity, such that everything can be said to be the same at all times and places except in degrees of perfection. I now see what Plato had in mind when he talked about matter as an imperfect and transitory being; what Aristotle meant by his 'entelechy;' how far the sceptics were right in decrying the senses. . . . How to make sense of those who put life and perception into everything. . . . I see everything to be regular and rich beyond what anyone has previously conceived; with matter everywhere organic – nothing empty, sterile, idle – nothing too uniform, everything varied but orderly; and, what surpasses the imagination, with the entire universe being epitomized, though always from a different point of view, in each of its parts and even in each of its substantial unities. . . . Well, sir, you will be surprised at all I have to tell you, especially when you grasp how much it elevates our knowledge of the greatness and perfection of God.⁸

Whether or not his contemporaries were surprised, there have been excellent reasons for the student of Leibniz's mature writings to be flabbergasted: this account of his philosophical evolution does not conform to other, more public ones that he gives in the same period; moreover, this description of his philosophy differs importantly from other presentations.

What are we to think? The short answer to the question is that Leibniz molded the story that he told about his development to fit the interests of his audience and he ordered the relations among his "first" principles to match his philosophical mood at the time. Consider another significant example from the mature writings. Leibniz's first public presentation of the main features of his mature metaphysics occurs in *A New System of the Nature and Communication of Substances, and of the Union of the Soul and the Body*, which he published anonymously in the *Journal des Savants* in 1695. Scholars have made much of the fact that, according to the story given there of his philosophical development, Leibniz was first an Aristotelian, then an atomist, and finally a rehabilitator of the substantial forms.⁹ According to Leibniz, after discovering "the atoms of substance" and the importance of the real unities in nature:

I thought I was entering port; but when I began to meditate about the union of soul and body, I felt as if I were thrown again into the open sea; for I could not find any

8. VI vi 71–73. For other mature texts in which he either uses or praises the philosophies of Plato and Aristotle, see, e.g., G III 51–52; G VII 319–22; there are abundant references throughout VI iv [B].

9. I discussed a part of this autobiographical account in ch. 7, sect. 4. For other accounts, see, e.g., G IV 478; G III 605–07; VI ii 511; II i 169–81; VI iii 155–59; II i 488–90; VI ii 433–44.

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way of explaining how the body makes anything happen in the soul, or *vice versa*, or how one substance can communicate with another created substance. Descartes had thrown in the sponge at this point. . . . But his disciples . . . judged that we sense the qualities of bodies because God causes thoughts to arise in the soul on the occasion of motions of matter. . . . That is what they call the *system of occasional causes*, which has been made very fashionable by the beautiful reflections of the author of the *Search after Truth*.¹⁰

We can approach Leibniz's account here in one of two ways. The first and more obvious option is to take it as literally true in all details. For decades, this is what scholars have done. Although some have noticed that Leibniz's account here contradicts other autobiographical descriptions, most commentators have either ignored the discrepancies or explained them away as further support of Russell's unflattering remarks about Leibniz as a social climber. While it is always a good idea to take a philosopher at his word, there is absolutely no textual evidence that Leibniz's development followed this general outline.

The other approach to this account is to see it as perfectly constructed for his readership. As recent scholars have noted, the journal for which the *New System* was written had a predominantly Cartesian audience.¹¹ That is, Leibniz could assume with a high degree of probability two things about his readers: first, that they had rejected traditional scholastic philosophy and would therefore find his use of substantial forms extremely odd; second, that they would be acutely sensitive to problems concerning the mind-body relation. We have seen other examples of Leibniz's ability to insinuate his views in a way that would appeal to his audience. I take the *New System* to be a paradigm case of the Rhetoric of Attraction. In this intellectual autobiography, Leibniz makes himself as much like his audience as possible: like most of them, this unnamed thinker had found repellent a part of his scholastic education, had been seduced by atoms and the void, and had been confused about matters concerning mind-body interaction. In fact, everything Leibniz says is true as long as we take the rejection of scholasticism to be partial, his atoms to be substantial atoms constituted of a union formed out of an active and a passive principle, and the mind-body problem to be only one among several problems that led to his core metaphysics. That is, Leibniz describes himself in terms as similar as possible to his audience while remaining faithful to the truth. Moreover, his strategy of engagement is brilliant: since Cartesianism was particularly weak on mind-body interaction, Leibniz hoped to catch and sustain the attention of these philosophers. As the full title of his essay suggests, he cleverly presents his philosophical system as a means to solve exactly that problem more satisfactorily than anyone else has done. In brief, everything in his *New System* is constructed to engage as much as possible his expected reader.

Finally, let's consider *First truths* as an example of his tendency to sum-

10. G IV 482-83; AG 142-43.

11. See, e.g., Brown, "Leibniz's 'New System' Strategy."

marize his views in a way that suggests the explanatory power of the underlying system while not divulging too much. In fact, *First truths* can be seen as an orchestrated attempt to attract attention. The bait has been nicely described by Sleight:

the concept containment account of truth seems to imply that a proposition is true just in case it is conceptually true, and, hence, to imply that a proposition is true just in case it is necessarily true. Yet we know from a number of papers authored during our time period that Leibniz rejected the thesis that if a proposition is true then it is necessarily true. So, why on earth did Leibniz accept an account of truth that, as he himself noted, exacerbates the problem of establishing that there are contingent truths?¹²

I propose that the answer to this question has two parts, which are closely related and for which I have no textual evidence. First, the reason that Leibniz continues to put forward his problematic theory of truth is that he took the theory to encapsulate the self-sufficiency of individual substances and the relation between God and the world: all the truths in the world are rooted in substances and all the truths in substances derive from the nature of God. Second, Leibniz *liked* concerned curiosity when the truth was involved: the theory of truth was perfectly gauged to grab people's attention. By such means, Leibniz hoped to lead his interlocutor to examine the system of Preestablished Harmony, see its rightness, and thereby be led to the truth. The fact that Leibniz was so mistaken about the actual effects of his strategy should not blind us to the fact that he had the noblest of intentions. In *First truths*, the theory of truth is supposed to act as a bridge between the truths of logic and the truths of the created world and thereby to offer a significant clue about God's relation to the world and every event in it. As Mondadori has shown, the Principle of Sufficient Reason and the theory of truth are very closely related in Leibniz's mature thought.¹³ Leibniz hoped to use the theory of truth to lead his contemporaries first to the Principle of Sufficient Reason and its notion of a complete *ratio*, then to the individual substance that functions as the complete *ratio* for its states, and finally to the Supreme Being who is the complete *ratio* for all created substances. In a sense, the truth behind the *First truths* is that Leibniz was keenly concerned to save our souls.¹⁴

12. For Sleight's comments, see Mercer and Sleight, "Metaphysics: The Early Period to the *Discourse on Metaphysics*," 108. For support of his point about Leibniz, Sleight cites *De libertate* written in 1689, the same year as *First truths*, in which Leibniz wrote: "Once I had recognized the contingency of things, I then began to consider what a clear notion of truth would be; for I hoped, not unreasonably, to derive from it some light on the problem of distinguishing necessity from contingent truth." Then, after summarizing the concept containment account of truth, he added: "But this only seemed to increase the difficulty for if, at a given time, the concept of the predicate is in the concept of the subject, then how, without contradiction and impossibility, can the predicate not be in the subject at that time?" See Foucher de Careil, *Nouvelles lettres et opuscules*, 178–185.

13. Mondadori, "Reference, Essentialism, and Modality in Leibniz's Metaphysics."

14. For a glimpse of Leibniz's vision of salvation, I refer the reader to a wonderful paper un-

2. Metaphysics of Substance and Metaphysics of Divinity

It has been a hundred years since Russell and Couturat first proposed their elegant interpretations of Leibniz's metaphysics. Commentators are now generally agreed that the philosophy is not the deductive system that the Russell–Couturat story had assumed. As Mates has written: “Leibniz's philosophy has no ‘beginning,’ that is, no unique, logically primitive set of axioms.”¹⁵ But it is important to go a step further than Mates and see that the propositions that Leibniz presents as “first principles” are themselves rooted in more basic philosophical assumptions. That there are such basic assumptions or inclinations some commentators have recently noted. On the basis of his meticulous study of the correspondence with Arnauld, Sleigh makes a distinction between “first principles per se,” principles that Leibniz explicitly calls first principles, and “attitudinal first principles,” where the latter “are basic principles that guided his metaphysical reasoning.” According to Sleigh: “There are first principles that Leibniz employed and called ‘first principles,’ i.e., the law of contradiction and the principle of sufficient reason. But there are attitudes at work, which can be formulated as principles, to which he rarely referred, but which must be recognized, in order to grasp his reasoning.”¹⁶ Other commentators have made similar points. Brown has noted that there are “background assumptions” and “accepted maxims” that lie behind Leibniz's conception of substance and for which Leibniz gives no argument.¹⁷ Garber puts it nicely when he notes that behind the fluctuations in Leibniz's thought, “there may be some very deep commitments . . . , commitments that shape and limit what appear to us as swings in his mature thought.”¹⁸ It is noteworthy that those commentators who have made a careful analysis of a particular work or collection of closely related works from Leibniz's middle period have concluded that there is a group of unstated principles, assumptions, or simple philosophical tendencies that lie beneath the explicit statements of Leibniz's thought. The suggestion is that, before an accurate picture of Leibniz's mature thought can be drawn, we need to know more about these underlying assumptions.

This book exposes those assumptions and thereby opens the way to a more careful analysis of the mature texts. When Leibniz emerged from the Rosental woods in 1661, he was on a path that would lead to the philosophy of the *First truths*. Once we unearth his early Metaphysics of Substance

earthed by Don Rutherford and quoted at length in the conclusion to his book. As that text suggests, in helping us to save our soul, Leibniz wanted to give us “wisdom and happiness” instead of “vanity and bitterness” and lead us to discover “the brilliant lights of the divine author of things.” Rutherford, *Rational Order*, 290.

15. Mates, *The Philosophy of Leibniz*, 4. 16. Sleigh, *Leibniz and Arnauld*, 11–12.

17. Brown, *Leibniz*, 99–101.

18. Garber, “Leibniz and the Foundations of Physics: The Middle Years,” 74.

and Metaphysics of Divinity, we recognize them as the unstated assumptions of the mature thought. When Leibniz wrote *First truths*, he probably had no specific audience in mind, but it is important to remember that this brief note is one of many *different* articulations of his system. That is, Leibniz was prepared to present his core metaphysics in a number of ways. *First truths* was *one* way of thinking through some of his core beliefs. Although it differs from the papers of the early period in the greater sophistication of its details, the same core metaphysics is present. In fact, every single one of Leibniz's "first truths" appears among the tenets of the core metaphysics. Nor has the terminology changed significantly.¹⁹ What is different from the texts of 1671–79 is of course the prominence given to the theory of truth. Leibniz explicitly states that the Principle of Sufficient Reason "directly follows" from the conjunction of the theory and the laws of identity and non-contradiction. In the remainder of the essay, he presents most of the main doctrines of the core metaphysics, which he says are other implications of "these considerations." In order of appearance, these are: "*that in nature there cannot be two individual things that differ in number alone;*" that "*there are no purely extrinsic denominations;*" that the "*complete or perfect notion of an individual substance contains all of its predicates, past, present, and future;*" that "*[e]very individual substance contains in its perfect notion the entire universe;*" that "*all individual created substances are different expressions of the same universe and different expressions of the same universal cause, namely, God;*" that "*strictly speaking no created substance exerts a metaphysical action or influx on any other thing;*" that the mind-body union and the relation among all created substances is one of "*concomitance;*" that "*[t]here is no vacuum;*" that "*[t]here is no [physical] atom;*" that "*every particle of the universe contains a world of an infinity of creatures;*" and that "*corporeal substance can neither arise nor perish except through creation or annihilation.*"²⁰

Nor is this list a complete set of Leibniz's core tenets; he says nothing here either about the doctrine of marks and traces or about real unity. We can safely conclude that *First truths* is one among several presentations of Leibniz's views, each one of which is an attempt to capture an important aspect of his thought. We can also conclude that neither the *First truths* nor any of the related presentations is by itself canonical. For example, in the *Discourse on metaphysics*, which was written only three years before *First truths*, Leibniz displays his doctrines in a different order and with different emphasis. In that first complete summary of his philosophy, Leibniz discusses a number of theological matters, before turning in section 8 to "the notion of an individual substance," a version of the concept-containment

19. The one exception is Leibniz's use of the scholastic phrase "extrinsic denomination" where the latter is a feature that can be predicated of a being although there is no basis in the being itself for the feature. Leibniz of course denies that there can be any such thing. In our discussion of the *Meditation on the principle of the individual* in ch. 10, sect. 2, we noted the forerunner of this tenet. See ch. 10, n. 138.

20. VI iv [B] 1644–49: AG 31–34\ L 267–70. In the Latin text, Leibniz highlights all his first principles. Both L and AG fail to highlight some of these.

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theory of truth, and the doctrine of mark and traces. It is worth quoting section 9 at length, beginning with its summary-title (in italics):

That each singular substance expresses the whole universe its own way, and that all its events, together with all their circumstances and the whole sequence of external things, are included in its notion. Several paradoxes follow from this; among others, it follows that it is not true that two substances can resemble each other completely and differ only in number. . . . It also follows that a substance can begin only by creation and end only by annihilation; that a substance is not divisible into two; that one substance cannot be constructed from two; and that thus the number of substances does not naturally increase and decrease, though they are often transformed.

Moreover, every substance is like a complete world and like a mirror of God or of the whole universe, which each one expresses in its own way, somewhat as the same city is variously represented depending upon the different positions from which it is viewed. Thus the universe is in some way multiplied as many times as there are substances, and the glory of God is likewise multiplied by as many entirely different representations of his work. It can even be said that every substance bears in some way the character of God's infinite wisdom and omnipotence and imitates him as much as it is capable. For it expresses, however confusedly, everything that happens in the universe, whether past, present, or future – this has some resemblance to an infinite perception or knowledge. And since all other substances in turn express this substance and accommodate themselves to it, one can say that it extends its power over all the others, in imitation of the creator's omnipotence.²¹

In the remainder of the *Discourse on metaphysics*, Leibniz presents the other doctrines contained in the *First truths* and he unpacks many of the metaphysical details that are supposed to follow from them. That is, the doctrines of the core metaphysics occur in both of these texts and yet in different order and with different emphasis.

Nor does Leibniz either motivate or explain these doctrines. He just posits them as his first truths. But we know better. These tenets evolved from even more basic assumptions about the self-sufficiency of substances and the relation between God and creatures. As we have seen, Leibniz inherited two fundamental beliefs from his teachers: (1) created substances are self-sufficient in the sense that they contain in their nature a sufficient reason for what they are and how they act, and (2) God emanates the divine attributes to all created substances and thereby creates a perfect unity within a multiplicity. Leibniz took his inheritance and applied it with enormous philosophical acumen to an array of problems in metaphysics, physics, ethics, and theology. The result is his core metaphysics, which he constructed in 1668–71, reexamined and developed (slightly) in 1672–79, and then used for the rest of his long philosophical career.

Obviously, there remains a good deal to be said about the fate of Leibniz's *Metaphysics of Substance* and *Metaphysics of Divinity* in the writings of the last three decades of his life. Scholars have long debated the degree to which Leibniz's views change during these years and in particular how his

21. VI iv [B] 1541–42; AG 41–42.

theory of substance evolved. Now that I have offered the proper philosophical and historical background against which that further development must be seen, it will be easier to uncover the motivations and subtleties of those changes. While it is obvious that the core metaphysics persists, it is also clear that Leibniz continued to rethink and revise some of its details. And now that the Academy editors have finished their painstaking work of editing and dating the vast philosophical materials of 1677–June 1690, it is possible for the first time to trace the next part of the story about the evolution of Leibniz's thought.²² This book has begun the full excavation of Leibniz's philosophy, but there is a great deal more work to be done.

3. Leibniz and seventeenth-century philosophy and science

The Leibniz of this book will come as a surprise to many and a disappointment to some. The philosopher exposed here does not fit neatly into the standard accounts of the history of philosophy and science. Given the brilliant contributions that he made in mathematics and physics, given the profundity of his views about the problem of evil, and given the Baroque quirkiness of his system, we are justified in being slightly surprised. The great Leibniz seems *not* to conform to the standard ways of being modern. He did not come to his philosophy through the careful reading and criticism of the great men of his age. Although he read the works of Galileo, Bacon, Descartes, Hobbes, and Gassendi, he was impatient with their details,²³ and developed his own system in conscious opposition to major parts of their modernism.²⁴ Although he made significant contributions to early modern mathematics and science, he did not develop any of his ideas through the careful study of nature. Nor did he deduce his philosophy from first truths that he intuited through *a priori* philosophical reflection. After 1676, he became increasingly interested in tracing the logical relations among his doctrines, but he arrived at his system by an entirely different path. Because for Leibniz the road to truth was paved with the books of the great philosophers, he collected ideas from the prominent philosophical traditions and then attempted to combine them in a way that would solve all the problems, and please everyone. Although the new mechanical philosophy also played

22. The fourth volume of Leibniz's philosophical papers was published in 1999. Volume 4 of Series VI is itself three volumes of writings and one volume of indices.
23. It is striking that Leibniz seems proud of the fact that he is too impatient to read the works of others with any care. He often confesses to reading philosophical texts through "like novels." See, e.g., II i 245; L 152. Leibniz readily admits to Malebranche that he did not read *The Search After Truth* with great care (II i 455; L 209).
24. There has been a good deal of important scholarship on the relation between these other "great" men and Leibniz. For the most important secondary literature, see the notes, ch. 1, sects. 1–2. As I argue in ch. 1, although Leibniz surely absorbed ideas from these sources, the contemporaries who most influenced the development of his core metaphysics were (for us) obscure figures like Thomasius, Weigel, Digby, De Raey, Kircher, and so on.

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an important part in his eclectic mixture, the basic ingredients of Leibniz's system are thoroughly traditional. In the end, both his intellectual goal and the devised means to that goal have ancient sources: the ultimate object of knowledge is God, the means to that knowledge are the divine Ideas, and all created things are emanations of the divine nature. Shockingly enough, the inventor of the calculus and the author of *First truths* developed the details of his system so that (among other things) they would mirror the harmony and perfection of God and solve the problems of the Eucharist and resurrection.

An aspect of Leibniz's brilliance that has gone unnoticed for too long is his ability to take materials from a wide variety of common sources and transform them into something that is somehow both vaguely familiar and entirely new. This is what Eliot recognized when he explained that "Leibniz's originality is in direct, not inverse ratio to his erudition."²⁵ Motivated from the beginning of his long philosophical career by a desire to construct political, intellectual, and personal peace, Leibniz set about making a system that would engage his contemporaries and eventually lead them to the truth. He was terribly wrong. It is ironic that *because* Leibniz was so mistaken about the power of his philosophy to lead people to the truth, the deep motivations of his thought have remained hidden for so long.

In conclusion, the origins and development of Leibniz's metaphysics are not quite what we expected. And that, I think, is a *good thing*. For too long, historians of early modern philosophy have ignored the historical and philosophical roots of their heroes and for too long we have glossed over the genuine intellectual diversity of the period. It is clear that Leibniz was brilliant. It is a fact that he contributed mightily to the history of philosophy and science. But it is also true that in glorious and unexpected ways, he seems from our perspective to be strangely unmodern and provocatively weird. It is important to recognize that Leibniz was only one among a number of thinkers in the seventeenth century who were wedded to traditional theological doctrines, to conciliatory eclecticism, and to the truth. More work needs to be done to unearth the fascinating details of this part of early modern philosophy and science. In the end, we should proclaim with Leibniz: "Let us shed prejudices and support geniuses of all ages!"²⁶

25. Eliot, "Leibniz's Monads and Bradley's Finite Centers," 567–68. Quoted in sect. 1.

26. Leibniz to Conring, May 1671, II i 95.

Appendix I

(Not exactly) First truths

I offer here a list of the fundamental tenets of Leibniz's mature philosophy as they are presented in the *First truths* of 1689, the *Discourse on metaphysics* of 1686, and related texts. For the sake of convenience, it will be helpful to present them here and offer an extremely brief summary. There is disagreement among scholars about the precise way to formulate some of these doctrines. I have tried to keep the controversial issues to a minimum. I present them here in the order in which they appear in *First truths*.¹

- 1. *The concept-containment account of truth.*

In *First truths*, Leibniz writes:

the predicate or consequent is always in the subject or antecedent, and the nature of truth in general or the connection between the terms of a statement, consists in this very thing, as Aristotle also observed. The connection and inclusion of the predicate in the subject is explicit in identities, but in all other propositions it is implicit and must be shown through the analysis of notions; *a priori* demonstration rests on this.²

In other words, the account of truth claims that a categorical, affirmative proposition, whether singular or universal, is true just in case the concept of its predicate is contained in the concept of its subject. See also *Discourse on metaphysics*, 8.

- 2. *The principle of sufficient reason.*

According to the *First truths*, there is “nothing without a reason, or there is no effect without a cause.”³ Leibniz often writes that for everything there is, there is a sufficient reason. Also see *Discourse on metaphysics*, 9.

- 3. *The principle of the identity of indiscernibles.*

In *First truths*, Leibniz writes:

in nature, there cannot be two individual things that differ in number alone. For it certainly must be possible to explain why they are different, and that explanation must derive from some difference they contain.⁴

1. The summary of the doctrines offered here is inspired by the account found in Sleight, *Leibniz and Arnauld*, though Sleight may not agree with the results.
2. VI iv [B] 1643: AG 31. 3. VI iv [B] 1643: AG 31. 4. VI iv [B] 1645: AG 32.

Some commentators emphasize the point that, for Leibniz, the basic assumption is that wherever there is numerical diversity there must be qualitative dissimilarity.⁵ See *Discourse on metaphysics*, 9.

- 4. The position that *there are no extrinsic denominations*.

The claim in *First truths* is that:

there are no purely extrinsic denominations, denominations which have absolutely no foundation in the very thing denominated. For it is necessary that the notion of the subject denominated contain the notion of the predicate. And consequently, whenever the denomination of a thing is changed, there must be variation in the thing itself.⁶

In other words, things cannot differ merely with respect to extrinsic properties, they must differ with respect to their intrinsic properties as well.⁷

- 5. The *complete-concept theory of substance*.

In *First truths*, Leibniz writes: "The complete or perfect notion of an individual substance contains all of its predicates, past, present, and future."⁸ In *Discourse 8*, he explains:

the nature of an individual substance or of a complete being is to have a notion so complete that it is sufficient to contain and to allow us to deduce from it all the predicates of the subject to which this notion is attributed.⁹

As Sleigh summarizes it, the doctrine asserts that a being is an individual substance if and only if its concept contains all and only the concepts of those entities that may be attributed to it. Also consider *Discourse on metaphysics*, 8 and 13.

- 6. The *expression hypothesis*.

The basic idea here is that each substance expresses or mirrors every other one from its own point of view. As Leibniz makes clear in *First truths*, the hypothesis has two parts. He writes:

Every individual substance contains in its perfect notion the entire universe and everything that exists in it, past, present, and future. For there is no thing on which one cannot impose some true denomination from another thing, at the very least a denomination of comparison and relation. Moreover, there is no purely extrinsic denomination. I have shown the same thing in many other ways, all in harmony with one another.

Indeed, *all created substances are different expressions of the same universe* and different expressions of the same universal cause, namely, God. But the expressions vary in perfection, just as different representations or drawings of the same town from different points of view do.¹⁰

5. Broad, *Leibniz: An Introduction*, 39. 6. VI iv [B] 1645-46: AG 32.

7. Sleigh, *Leibniz and Arnauld*, 75. 8. VI iv [B] 1646: AG 32.

9. VI iv [B] 1540: AG 41. 10. VI iv [B] 1646: AG 32-33.

In *Discourse on metaphysics* 9, he writes:

Moreover, every substance is like a complete world and like a mirror of God or of the whole universe, which each one expresses in its own way, somewhat as the same city is variously represented depending upon the different positions from which it is viewed.¹¹

Also see *Discourse on metaphysics*, 15 and 29.

- 7. The *world apart thesis*.

In *First truths*, Leibniz claims:

Strictly speaking, one can say that *no created substance exerts a metaphysical action or influx on any other thing*. For, not to mention the fact that one cannot explain how something can pass from one thing into the substance of another, we have already shown that from the notion of each and every thing follows all of its future states.¹²

Here the view is basically that that no quality or state of any created substance has as a real cause some quality or state of another such substance and hence that there is no intersubstantial interaction. Also consider *Discourse on metaphysics*, 9 and 14.

- 8. The *doctrine of preestablished harmony or concomitance*.

In *First truths*, Leibniz presents the doctrine only as it bears on the mind-body relation where the two are considered two separate substances. Generally, however, the doctrine applies to the relation between any two created substances. The basic idea is that God created finite substances in such a way that they do not causally interact, but harmonize with each other in virtue of their internal nature.¹³ Also see *Discourse on metaphysics*, 13, 15, and 28.

- 9. The *doctrine of spontaneity*.

Leibniz does not explicitly present this in *First truths*, but it is a common feature of his notion of preestablished harmony. According to the doctrine, for every quality or state of a substance, there is a cause of that quality or state in the nature of the substance. Also see *Discourse on metaphysics*, 14.

- 10. The *thesis of parallelism*.

In *First truths*, Leibniz writes:

For God from the beginning constituted both the soul and the body with such wisdom and such workmanship that, from the first constitution or notion of a thing, everything that happens through itself [per se] in the one

11. VI iv [B] 1542: AG 42. 12. VI iv [B] 1646–47: AG 33.
13. VI iv [B] 1647: AG 33.

corresponds perfectly to everything that happens in the other, just as if something passed from one to the other.¹⁴

In other words, the qualities or states of each substance agree or correspond perfectly with those of every other at any given time. Also see *Discourse on metaphysics*, 14 and 15.

- 11. The *infinity of creatures thesis*.

As he argues in the *First truths*, this thesis is closely related to his claims that there is neither vacua nor atoms in the world. Here the basic point is that the world is as full as possible.¹⁵

- 12. The *hypothesis of the indestructibility of substances*.

The assumption in *First truths* and elsewhere is that substances can neither be created nor destroyed by any natural means; that is, only God can create and destroy substances.¹⁶ Also see *Discourse on metaphysics*, 9 and 12.

The following doctrines are not found in *First truths*, but are contained in other works of the same period.

- 13. The *hypothesis of the indivisibility of substances*.

Asserts that substances are not divisible. Also see *Discourse on metaphysics*, 9.

- 14. The *real unity hypothesis*.

Claims that a being is a substance if and only if it has real unity (*unum per se*). See especially the letters to Arnauld of November 1686 and April 1687.

- 15. The *doctrine of marks and traces*.

States that the present state of a substance contains marks of all it will be and traces of all it has been. Also see *Discourse on metaphysics*, 8 and 29.

14. Ibid. 15. VI iv [B] 1647–48: AG 34. 16. VI iv [B] 1649: AG 34.

Appendix II

Leibniz's Original Assumptions

I present here a brief account of the assumptions uncovered in the textual analysis of each chapter. In an attempt to distinguish between the early assumptions and the mature tenets, I have capitalized the former.

Chapter 1: Eclecticism and conciliation, 1661–68

The *Metaphysics of Method* assumes that the true metaphysics will be constructed from the underlying truths in the great philosophical systems, will be consistent with Christian doctrine and the claims of revelation, and will explain the phenomena (including the new experimental findings).

The *Rhetoric of Attraction* attempts to engage the sectarian reader by using agreeable philosophical terminology and by extolling the virtues of the reader's sect while attracting attention to the virtues of other philosophical schools; ultimately the goal is to entice the reader to consider the underlying (and usually unstated) assumptions, which Leibniz considers to be true and which he thinks will eventually lead the reader to philosophical enlightenment and intellectual peace.

Chapter 2: Aristotelian assumptions, 1668–69

The *Principle of Self-Sufficiency* assumes that a being S is self-sufficient if and only if the complete *ratio* for its features can be discovered in the nature of S. (In 1668, Leibniz is almost certainly here concerned only with primary features.)

The *Principle of Substantial Self-Sufficiency* assumes that a being S is a substance if and only if S is self-sufficient.

The *Principle of Causal Self-Sufficiency* assumes that for any being S, strictly speaking, S can be said to have a feature f and f can be said to exist in S just in case the complete *ratio* for f can be found in the nature of S. (In 1668, Leibniz is almost certainly concerned here only with primary features.)

The *Principle of Substantial Activity* assumes that a being S is a substance if and only if it subsists per se and S subsists per se if and only if it has a principle of activity within its own nature.

The *Principle of Sufficient Reason* assumes that, for everything there is, there is a complete *ratio*.

The notion of a complete *ratio* assumed in these principles is:

For some state or feature *f*, a complete *ratio* of *f* (1) constitutes the necessary and sufficient condition for *f*; (2) is perspicuous in that, in those cases where one can understand it, one sees exactly why *f* as opposed to some other state of affairs came about; (3) is such that in those cases when a full account of it can be given, that account constitutes a complete explanation of *f*; and (4) the *ratio* itself does not require a reason of the same type.

The *Logical Assumption* claims that, for any state or feature *f*, the logically necessary and sufficient conditions of *f* exist and in theory can be articulated.

The *Intelligibility Assumption* claims that those conditions are in theory intelligible. It is important to note that, when taken with the Principle of Causal Self-Sufficiency, the Intelligibility Assumption implies that for any feature *f*, *f* cannot be said to belong to a being *S* unless one can in theory understand how the nature of *S* acts as the cause of *f*.

The *Substantial Nature Assumption*, which is very closely related to the Principle of Substantial Self-Sufficiency, claims that, for every substance *S*, it has a nature that contains the set of necessary and sufficient conditions or the complete *ratio* for those features which strictly belong to it and moreover those conditions are in theory intelligible. (In 1668, Leibniz is almost certainly concerned only with primary features.)

The (1668) *Substantial Form Assumption* asserts that, for every substance *S*, *S* will have a (mind-like) substantial form that contains the principle of activity of *S*.

The *Complete-Ratio Theory of Substance* claims that the nature of a substance *S* contains the complete *ratio* for all its states or features (and not just its primary ones).

Chapter 3: Original conception of substance, 1669

The *Original Theory of (non-human) Corporeal Substance* asserts that divine mind (or primary form) takes body qua matter, which is extended passive matter, activates or organizes it, and thereby produces a (secondary) form or body qua form (i.e., an organized arrangement of matter), which has its own essence and is the cause and explanation of its (primary) features.

Chapter 4: Second conception of substance, 1669–early 1671

The *Second Theory of Corporeal Substance* maintains that, for each corporeal substance S, whether human or non-human, the nature of S is constituted of a mind-like substantial form F and a passive principle P. Consistent with the *Substantial Form Assumption* and the *Passive Principle Assumption*, F acts on P to produce an organization with P such that the organization is the nature of S. (In 1670–early 1671, the mind-like substantial form in unconscious substances is a momentary mind.)

The (1670) *Substantial Form Assumption* claims that, for every mind-like substantial form F in a corporeal substance S, F acts constantly on its passive principle P by a set of instructions given it by God, F creates a substantial unity with P by so acting, F is permanently attached to P so that F will only act outside itself through P, and the acting of F is a form of thinking that produces thoughts.

The (1670) *Passive Principle Assumption* maintains that, for every passive principle P that forms a unity with a mind-like substantial form F, P contains nothing active in itself and P is the “instrument of acting” of F.

Chapter 5: Platonist Assumptions

The *Supreme Being Assumption* claims that there is a wholly perfect, self-sufficient, and unified being on which all else depends and, moreover, that each of the features of unity, self-sufficiency, perfection, and reality is a function of the other.

The *Principle of Harmonized Plenitude* assumes that the goodness of the world is partly a function of the variety of the beings within it, partly a function of the sum of the goodness of the beings within it, and partly a function of the order among those beings where the latter is understood primarily in terms of the *Enhancement Relation* among beings.

The *Enhancement Relation* is as follows: for every being S that has an Enhancement Relation to a being R, the relation of S to R is such that an increase in the goodness of S will promote an increase in R which is non-reciprocal (that is, the increase in R will not then promote an increase in S).

The *Theory of Emanative Causation* claims that, for a being A that is more perfect than a being B, A can emanate its attribute f-ness to B in such a way that neither A nor A’s f-ness is depleted in any way, while B has f-ness, though in a manner inferior to the way it exists in A. The emanative process is continual so that B will instantiate f-ness if and only if A emanates f-ness to it.

The *Relation of Sympathy*, which can be more or less, claims that each created being corresponds to the activity and states of all other beings.

The *Theory of Reflective Harmony* claims that there is an interrelation among minds such that each mind thinks or reflects all the others in such a way that each mind may be said to contain all the others.

The *Creaturely Inferiority Complex* asserts that every product of the Supreme Being contains all the attributes that constitute the divine essence, though the product instantiates each of those attributes in a manner inferior to the way in which they exist in the Supreme Being and moreover the grade of perfection of a creature is related to the clarity of its instantiation of the divine essence.

The *Epistemological Assumption* claims (1) that the mind is the object of knowledge in the sense that it contains the eternal truths or Ideas, (2) that the mind, which is mutable and finite, will become aware of those objects only if it both turns away from the material world and is aided by the divine light, and (3) that it is the intellect or understanding that is capable of grasping those truths.

The *Doctrine of the Hierarchy of Being* maintains that matter, which is the lowest stratum of the hierarchy, lacks all power and causal efficacy, while human souls, which constitute the highest stratum of created being other than angels, can only be created and destroyed by God.

The *Causal Seed Doctrine* asserts that God created everything in the beginning as seminal *rationes*, which remain dormant until the appropriate time for them to become causally efficacious.

Chapter 6: Metaphysics of Divinity, 1668–early 1671

(1670–early 1671) *Emanative Harmony* claims that God is the variety in the world in that every creature is an inferior instantiation of the divine essence and that God is the unity in the world in the two-fold sense that each individual creature and the totality of creatures instantiate the divine unity so that each individual is a unity and the totality is an interrelated whole.

(1670–early 1671) *Reflective Harmony*, which is closely related to the Platonist assumption articulated in chapter 5, claims that there is an interrelation among human minds such that each mind thinks or reflects all the others, at least with regard to their moral development.

Summary of the *Speculative Creation Story*, which is roughly the same as the *Emanative Creation Story*:

- (1) Among an infinity of emanative options (each of which is a version of the divine essence), the Supreme Being chooses one. God emanates this (selected) divine essence so as to create and sustain the world. Each in-

dividual created substance S is an instantiation of the (selected) divine essence.

- (2) For every created individual substance S, there is a complete concept in God's mind that contains all the predicates of S and that is a version of the (selected) divine essence.
- (3) For every individual substance S, there is a substantial form F that contains a set of instructions that tells F how to activate and organize its passive principle P at every moment of S's existence, and that therefore functions as the ontological correlate of the complete concept in that every predicate in the complete concept of S has a correlate in the set of instructions, and the instructions constitute the necessary condition for the true ascription of those predicates.
- (4) There is intersubstantial causation among substances and (Weak) Parallelism where the latter is understood as follows: for every substance S, the set of instructions in the substantial form F of S is constructed so that the actions of S will perfectly correspond to those of all the substances with which S interacts, with the result that all the predicates contained in the complete concept of S will be true of S.
- (5) Every instantiation of the (selected) divine essence is different from every other; that is, there are no two created substances with the same individual essence.

The (early 1671) *Substantial Form Assumption* claims that, for every mind-like substantial form F in a substance S, F acts constantly on its passive principle P by a set of instructions given it by God and that constitute the ontological correlate of the complete concept of S, F creates a substantial unity with P by so acting, F is permanently attached to P so that F will only act outside itself through P, the acting of F is a form of thinking that produces thoughts, and moreover F acts through emanation and therefore can neither be created nor destroyed by anything other than God.

Chapter 7: Matter, passivity, and panorganic vitalism, 1670–71

The (early 1671) *Passive Principle Assumption* claims that, for every passive principle P that forms a unity with a mind-like substantial form F, P consists in a panorganic collection of substances, each of which is itself constituted of a substantial form and passive principle, and so on *in infinitum* and, moreover, the identity of P is determined by the dominant minds or substantial forms of the corporeal substances in P so that the core of substance that results from the unity of F and P is such that P is F's instrument of acting.

Chapter 8: Phenomenalism and Preestablished Harmony, 1671

Complete-Ratio Phenomenalism claims that, for every mind-like form F, there is a complete *ratio* in F for all its thoughts (i.e., its states) where the complete *ratio* is best understood in terms of a *Production Rule*.

The *Production Rule* of a mind-like substantial form F contains instructions for the production of the states of F in the sense that the necessary and sufficient conditions for each state of the substantial form F consists in the conjunction of the principle of activity in F, its Production Rule, and its previous state.

(Mid-1671) *Emanative Harmony* claims (1) that God is the variety in the world in that every substance, although it contains the same (selected) divine essence as every other substance, also contains a Production Rule according to which it instantiates that essence in a way different from every other substance, and (2) that God is the unity in the world in the two-fold sense that each individual creature and the totality of creatures instantiate the divine unity so that each individual is a unity and the totality is an interrelated whole.

(Mid-1671) *Reflective Harmony* extends the relation of Reflective Harmony to all thinking creatures, that is, it claims that every thinking substance thinks or reflects the entire world. It follows that every thinking substance reflects all other substances and in that sense contains them.

The (mid-1671) *Theory of Corporeal Substance* maintains that, for each corporeal substance S, whether human or non-human, the nature of S is constituted of a mind-like substantial form F and a passive principle P, where F and P have a *Prearranged Diffusion Relation* with one another. For the nature of F, see the (mid-1671) *Substantial Form Assumption*; for the nature of P, see the (early 1671) *Passive Principle Assumption*.

The (mid-1671) *Substantial Form Assumption* claims that, for every mind-like substantial form F in a corporeal substance S, F acts constantly through emanation and therefore can neither be created nor destroyed by anything other than God; F contains the (selected) divine essence and a Production Rule where the latter specifies how F will emanate the former; F emanates its states which are its thoughts and which are the ontological correlates of the predicates in the complete concept of S; F is permanently rooted in its passive principle P with which it forms a *core of substance*, where the relation between F and P is one of *Prearranged Diffusion* and where the unity is indissoluble.

The (1671) *Prearranged Diffusion Relation* between F and P in a substance S creates a *core of substance* which is constituted by F and the dominant minds in P and which can be more or less expansive (for details, see ch. 8, sect. 3). The Diffusion Relation is such that, although each of the subordinate substances in P acts out of its own nature, F emanates instructions for the activity of each of those substances and each of its substances perceives its instructions; moreover, the activity of F and of the substances in P is each a necessary condition and all are sufficient for any substantial feature f of S.

The Diffusion Relation assumes Complete-*Ratio* Phenomenalism, the Complete-*Ratio* Theory of Substance, and (*Strong*) *Parallelism*.

(Mid-1671) (*Strong*) *Parallelism* is the view that the constituents of a substance S are in perfect correspondence with one another.

Chapter 9: Preestablished Harmony, late 1671–early 1672
(Early 1672) *Reflective Harmony* claims that every substance thinks or reflects the entire world and contains every other substance in the sense that it perceives all the states or thoughts of all the others.

The (early 1672) *Substantial Form Assumption* claims that, for every mind-like substantial form F in a corporeal substance S, F acts constantly through emanation and therefore can neither be created nor destroyed by anything other than God; F contains the (selected) divine essence and a Production Rule where the latter specifies how F will emanate the former; F emanates its states which are its thoughts, which change constantly, which are the ontological correlates of the predicates in the complete concept of S, and which are a more or less clear instantiation of the (selected) divine essence; F is permanently rooted in its passive principle P with which it forms a *core of substance*, where the relation between F and P is one of Prearranged Diffusion and where the unity is indissoluble.

The (early 1672) *Theory of Corporeal Substance* maintains that, for each corporeal substance S, whether human or non-human, the nature of S is constituted of a mind-like substantial form F and a passive principle P, where F and P have a Prearranged Diffusion Relation with one another. For the nature of F, see the (early 1672) Substantial Form Assumption; for the nature of P, see the (early 1671) Passive Principle Assumption.

The (early 1672) *Prearranged Diffusion Relation* between F and P in a substance S creates a *core of substance* which is constituted by F and the dominant minds in P and which can be more or less expansive (for details, see ch. 8, sect. 3). The Diffusion Relation is such that, although each of the subordinate substances in P acts out of its own nature, F emanates instructions for the activity of each of its substances and each of those substances perceives its instructions; the activity of F and of the substances in P is each a necessary condition and all are sufficient for any substantial feature f of S; and moreover, f is a perception or state whose source is F. The Diffusion Relation assumes Complete-*Ratio* Phenomenalism, the Complete-*Ratio* Theory of Substance, and (*Strong*) *Parallelism*.

Chapter 10: Final steps toward the mature philosophy, 1672–1679
1672 (*Strong*) *Parallelism* is the view that created substances are in perfect

correspondence with one another. This means, among other things, that a substance S will have a perception of R qua sensory thing if and only if R qua sensory thing perfectly corresponds to the actions and passions of R qua active thing.

The (1676) *Substantial Form Assumption* claims that, for every mind-like substantial form F in a corporeal substance S, F acts constantly through emanation and therefore can neither be created nor destroyed by anything other than God; F contains the (selected) divine essence and a Production Rule where the latter specifies how F will emanate the former and therefore contains marks of everything F will do; F emanates its states which are its thoughts, which change constantly, which are the ontological correlates of the predicates in the complete concept of S, and which are a more or less clear instantiation of the (selected) divine essence; F is permanently rooted in its passive principle P with which it forms a *core of substance*, where the relation between F and P is one of Prearranged Diffusion and where the unity is indissoluble; F is eternal, differs from every other mind in the world, and mirrors all the others; and each state of F contains traces of all its previous states and is such that an understanding of it will lead to knowledge of its cause.

The (1676) *Expression Relation* is such that S expresses an essence E just in case S is a partial representation of E which means (at least) that to understand S is equivalent to having a partial cognition of E. In the texts of 1676, every created substance (and every state of a substance) has an Expression Relation with God: because every created substance S (and every state of S) contains the (selected) divine essence, S (and every state of S) will be a partial expression of the divine essence. Moreover, for any two distinct substances S and R, each can be said to express the other because each is a partial (though distinctive) expression of the same divine essence.

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