

# Durkheim's Dilemma: Toward a Sociology of Emergence\*

R. KEITH SAWYER

Washington University in St. Louis

*The concept of emergence is a central thread uniting Durkheim's theoretical and empirical work, yet this aspect of Durkheim's work has been neglected. I reinterpret Durkheim in light of theories of emergence developed by contemporary philosophers of mind, and I show that Durkheim's writings prefigure many elements of these contemporary theories. Reading Durkheim as an emergentist helps to clarify several difficult and confusing aspects of his work, and reveals a range of unresolved issues. I identify five such issues, and I show how Durkheim's writings on emergence suggest potential responses.*

There can be no sociology unless societies exist, and . . . societies cannot exist if there are only individuals.

Emile Durkheim ([1897] 1951:38)

From its nineteenth-century origins, sociology has been faced with a foundational question: In what sense do social phenomena exist? We study social groups, collective behavior, institutions, social structures, social networks, and social dynamics, and after all, such social phenomena are only composed of the people who are in them. Thus, social phenomena seem to have no ontological status; and if not, sociology can ultimately be reduced to facts about individuals. Durkheim was the first to argue that this question was foundational to sociology. He argued that if only individuals exist, "Sociological laws can be only a corollary of the more general laws of psychology; the ultimate explanation of collective life will consist in showing how it emanates from human nature in general" ([1895] 1964:98). With the recent rise of individualism in sociology—including rational action theory, computational modeling techniques derived from artificial life, game-theoretic models, and various types of subjectivism—an independent discipline of sociology is, if anything, more threatened than in Durkheim's day.

Most philosophers of the nineteenth century held to either utilitarian atomism (in which sociology is ultimately reducible to psychology) or metaphysical organicism. To many of his contemporaries this seemed to be an unresolvable dilemma: one was either a scientist and accepted that society was reducible to individuals, or else one was proposing a metaphysical dualism. In this paper I present a new perspective on how Durkheim resolved this dilemma. Durkheim proposed a third path: a scientific sociology that could not be connected in any systematic way to psychological phenomena. Drawing on contemporary philosophy, I interpret Durkheim as a theorist of *social emergence*. I argue that the central guiding premise that unifies all of Durkheim's work is the attempt to account for both the emergence of the social from the individual, and *downward causation* from the social to the individual.

Although many sociologists have acknowledged in passing that Durkheim was an emergence theorist (e.g., Cohen 1989:71–76; Giddens 1984:169–74; Goldstein [1958] 1973:281;

\*During the preparation of this article, I was supported in part by a National Academy of Education Spencer Postdoctoral Fellowship. Direct all correspondence to: R. Keith Sawyer, Washington University, Program in Social Thought and Analysis, Campus Box 1183, St. Louis, MO 63130. E-mail: keith@keithsawyer.com

Porpora 1993:222; Schmaus 1994:51–53), none has substantively engaged this thread of Durkheim's work. Durkheim's emergence argument has been widely misunderstood, starting with his contemporaries and continuing through the twentieth century. Many contemporary sociologists have read it to be an unresolvable dilemma, and have dismissed his discussions of this theory as metaphysical, unscientific, or logically incoherent, particularly in the *Rules*, where this argument is made most forcefully. Thus, many scholars have argued that the *Rules* is an odd, almost embarrassing misstep that Durkheim quickly abandoned (Clark 1969; Fenton 1984; Giddens 1977; Lukes 1973; Parsons [1937] 1949; Pickering 1984:288; cf. Berthelot 1995; Gane 1988; and Turner 1995:2). I argue that such interpretations result from a failure to understand Durkheim's theory of social emergence. This failure has led to a wide range of misunderstandings of Durkheim that are fairly entrenched, including the perceived weakness of the *Rules*, the notion that one can separate Durkheim's theoretical and empirical work, and the suggestion that there were "two Durkheims," with a fundamental break in his work after *Suicide*.

This failure to understand Durkheim's theory of emergence is a manifestation of a broader bias in American sociology toward individualist sociological theories (cf. Hinkle 1960). I use the term "individualist" in Mayhew's (1980) broad sense, to include sociological theories that fundamentally require a theory of the individual, whether that theory is objectivist or subjectivist. Durkheim's theory of emergence, in contrast, is largely a structuralist theory; an emergentist reading of Durkheim lends support to those who claim that Durkheim was a structural sociologist. Beginning with Parsons's ([1937] 1949) influential voluntarist reading of Durkheim, many sociologists have emphasized the voluntarist elements of his theory, and this individualist emphasis has contributed to a misunderstanding of his theory of emergence.

Since the 1960s, philosophers of mind have examined emergence processes in the context of the mind-brain debate, resurrecting a philosophical tradition of emergentism extending back to the 1920s (McLaughlin 1992). Like Durkheim, these philosophers view emergence as a third path—in their case, between neurophysical atomism and metaphysical dualism. To date, these recent philosophical debates have not filtered into sociology. In the first half of the paper, I outline contemporary thinking on emergence in philosophy, and I revisit Durkheim as an emergence theorist through the lens of this recent work. In the second half of the paper, I draw on the contemporary philosophy of emergence to identify several unresolved issues in Durkheim's emergence theory. Reconstituted as an emergence theorist, Durkheim points the way toward a resolution of the atomism-holism dilemma that is compatible with both individualism and macrosociological theory.

## EMERGENCE IN CONTEMPORARY PHILOSOPHY

In recent decades, emergence has been extensively discussed by philosophers of mind, psychological theorists, and cognitive scientists because these fields are increasingly threatened by the potential of reduction to neuroscience. The threat—analogue to the threats of methodological individualism facing sociology—is that these disciplines will be reduced to explanations and analyses of neurons and their interactions. These conceptions of emergence have been inspired by computational models of emergence processes, including connectionism (Clark 1997), artificial life (Brooks and Maes 1994; Langton 1994), and multi-agent models of social systems (Gilbert and Conte 1995; Prietula, Carley, and Gasser 1998). In this recent formulation, *emergent systems* are complex dynamical systems that display global behavior that cannot be predicted from a full and complete description of the component units of the system.

Canonical examples of emergence include traffic jams, the colonies of social insects, and bird flocks. For example, the "V" shape of the bird flock does not result from one bird being selected as the leader, and the other birds lining up behind the leader. Instead, each bird's behavior is based on his position relative to his neighboring two birds. The "V" shape is not planned or centrally determined; it emerges out of simple pair-interaction rules. The bird flock demonstrates one of the most striking features of emergent phenomena: higher-level regularities are often the result of quite simple rules and interactions at the lower level. Many emergence researchers have attempted to develop computer models that would allow them to predict how higher-level patterns emerge from lower-level rules of interaction. For example, such a program has been developed for bird flocks (Reynolds 1987).

The bird flock is a fairly simple example of an emergent pattern, one for which a reductionist explanation can be provided. However, for many complex systems, reductionist explanations of emergent phenomena are elusive. Complexity theory has long noted that complex systems display an unusual sensitivity to initial conditions. The system's behavior follows general laws, but because the effect of a small change in initial conditions is so large, predictability from the laws can be undecidable or noncomputable (Chapman 1987; Meyer and Brown 1998). Thus, in sufficiently complex systems, higher-level emergent patterns may not be predictable from laws at the lower level. By this reasoning, some philosophers have argued that the human mind, as an emergent phenomenon, cannot be reduced to neurophysical explanations, even though it is emergent from neuronal interactions. This position is known as *nonreductive physicalism*.

Computer simulations of social systems are based on emergence assumptions. Many of these models derive from artificial life technologies, such as the work associated with the Sante Fe Institute (e.g., Epstein and Axtell 1996). Other social modeling work is based on multi-agent systems technologies (Gilbert and Conte 1995; Lesser 1995). In multi-agent simulations, the system is designed to be self-organizing through emergence processes. Global conventions emerge from the simulation, even though each agent is autonomous and has access only to locally available information. Walker and Wooldridge (1995) identify 16 different mechanisms whereby a society of agents could arrive at such a global agreement on conventions, including the convention of private ownership. Such simulations have been extended even to the emergence of symbolic structures such as communicative norms. For example, Steels (1997) develops a multi-agent simulation in which a set of language conventions emerge. In such social simulations, once the conventions have emerged, the system typically reaches a steady state such that the emergent conventions are maintained over time through the same self-organizing, emergence processes.

As with the bird flock, such simulations remain essentially reductionist, and assume the utilitarian-atomist conception of the individual that most sociologists thought had been convincingly put to rest 100 years ago (cf. Parsons [1937] 1949). Durkheim, who rejected the utilitarian atomism of Spencer, is not an emergence theorist in this sense. To understand Durkheim's notion of emergence, and how it is compatible with his theory of the individual, we need to draw on recent philosophical theories of emergence in the philosophy of mind.

Philosophers of mind turned to emergence beginning in the 1960s, following the cognitivist rejection of behaviorism. Cognitivists had to answer the question: If higher-level mental phenomena are merely epiphenomenal, with no causal powers, then why should scientific psychology attempt to study them? In the philosophy of mind, the cognitive revolution reactivated a nineteenth-century debate, with *identity theorists* holding to the reductionist position (the mind is nothing more than the biological brain) and *nonreductive physicalists* holding that mental properties and events are not reducible to physical ones

(Davidson 1970; Fodor 1974), and may indeed have causal power over the physical brain (Andersen, Emmeche, Finnemann, and Christiansen 2000; Heil and Mele 1993; Lowe 1993). At various points in this recent debate, concepts of emergence have played a key role (Beckermann, Flohr, and Kim 1992; Humphreys, Rohrlich, Rosenberg, and Wimsatt 1996; Kim 1993); as Kim (1992) and Margolis (1986) argued, nonreductive physicalism is essentially an emergentist position.

The nonreductive physicalist argument is grounded in the philosophy of science tradition, and focuses on the terms, concepts, laws, and theories associated with a scientific discipline. In this tradition, the question of reductionism is not an ontological question about the putative existence of higher levels of analysis, but rather is formulated as a question about scientific laws, concepts, and terms: Can a law or concept from psychology be reduced to a neurobiological law? By analogy, the question for sociological theory would be: Can a law or a concept from sociology—in this sense, structural sociology—be reduced to an individualist law or concept? The nonreductive physicalist argues that there are strong grounds for believing that this reduction is not possible, even though there is nothing in the universe other than physical matter. Because there is only physical matter, there are only physical events; thus, psychological events are the same events as neurophysiological events. However, descriptions of these events within different scientific languages may be incommensurable, and the higher-level description may on occasion be a better description. The canonical statements of this argument are Davidson (1970) and Fodor (1974) and a parallel sociological account is found in Sawyer (forthcoming).

Fodor's (1974) argument is based on the concept of *natural kind terms* and on a certain notion of what counts as a scientific law. A law is a statement within which the basic terms are natural kind terms of that science. To reduce a law to the science of the lower level, a *bridge law* must be identified that translates that law. To accomplish this, each of the natural kind terms of the higher-level science must be translatable into natural kind terms of the lower-level science.

The crux of Fodor's argument is that there is no a priori reason to believe that this will be possible for any given pair of scientific disciplines; whether or not such a reduction is possible must be determined empirically. His argument is that a simple translation—in his case, from a psychological term to some combination of physical terms—may not be possible. Instead, the physical equivalent of a psychological term may be a wild, apparently random combination of physical concepts and terms; Fodor terms such a translation *wildly disjunctive*. In the canonical example, the psychological term "pain" might be realized by a neurological state in a person, or by a silicon state in a robot. Even within a single individual, "pain" could be realized on different occasions by very different brain states: one brain state on one occasion, a different brain state on a separate occasion, and a third brain state on a third occasion.

Fodor argues that a true scientific law cannot have wildly disjunctive components. Whether or not one holds to this definition of a law, it is clearly of limited scientific usefulness to have laws containing wildly disjunctive terms, because they provide only limited understanding of the phenomena under study; and they are of limited predictive usefulness because they apply only to a specific disjunctive case, whereas the higher-level law is likely to be more generally applicable. Such reductions can nonetheless be useful to explain exceptions to the higher-level laws; Fodor's argument explains why laws in the special sciences will always have exceptions.

Subsequently, several philosophers noted that this account does not provide for the appearance of *mental causation*; in nonreductive physicalism, the mental seems to be epiphenomenal (Lowe 1993). Consequently, many philosophers of mind have attempted to extend nonreductive physicalism to allow the mental to be more than epiphenomenal (see

the papers in Heil and Mele 1993). For example, several philosophers have argued that some complex systems exhibit *downward causation*, in which an emergent higher-level property or pattern begins to cause effects in the lower level, either in the component entities or in their patterns of interaction (Andersen et al. 2000). There is no downward causation in a bird flock; the "V" shape has no effect on the birds, and none of the birds is aware that such a shape exists. Likewise, there is no downward causation in any of the multi-agent social simulations; because the theory behind such simulations is atomistic and reductionist, higher-level patterns must be epiphenomenal. The philosophy of mental causation remains hotly debated (see especially Kim 1993), even as nonreductive physicalism is widely accepted.

In sum, philosophers have staked out a nonreductionist position that is not found in contemporary sociology. Nonreductive physicalists are ontologically explicit in holding to materialism, yet at the same time maintaining that analysis at the higher level may nonetheless be necessary. Philosophers have only recently begun to draw analogies between these arguments for the independence of a mental level of analysis, and arguments for the independence of a sociological level of analysis. The analogous position in sociological theory would be to hold to an individualist ontology—nothing but individuals exists, and social structures do not have a distinct existence—yet, social science may have to proceed as if social structural phenomena "exist" (Sawyer forthcoming). This form of nonreductionism does not require a theory of the individual as subjective or voluntaristic; in this sense, it meets Mayhew's (1980) requirements for structural sociology, and suggests an anti-reductionist sociological theory that is distinct from contemporary theories based on hermeneutic or interpretivist accounts of the individual. At the same time, emergentism is compatible with the science of the lower level, unlike the nonreductionism of many structuralist sociologists, who refuse on principle to connect sociology to the science of the individual (more on this below).

#### DURKHEIM'S CONCEPT OF *SUI GENERIS*

Society is not a mere sum of individuals.

Durkheim, *Rules*, [1895] 1964:103

Social things are actualized only through men; they are a product of human activity.

Durkheim, *Rules*, [1895] 1964:17

These seemingly contradictory quotations epitomize Durkheim's dilemma. In the *Rules*, Durkheim seemed to bounce between two incompatible ontological positions: society is not just a sum of individuals, yet social facts arise out of joint activity among individuals. Society emerges from individuals in interaction, yet social structure then becomes autonomous and external to individuals, and exerts causal power over those individuals ([1893] 1984). Contemporary interpreters of Durkheim have typically read these as unresolvable contradictions or as unfortunate ambiguities, requiring either a dismissal of Durkheim's theory or a radical reworking (e.g., Alexander 1982; Giddens 1977; Lukes 1973).

These apparent dilemmas can be resolved by interpreting Durkheim as an emergence theorist. Durkheim's theory of emergence is presented most explicitly in the *Rules* and in the essay "Individual and Collective Representations," and its empirical demonstration is the explicit purpose of *Suicide*. He presented his work in terms of emergence throughout his career, from the beginning—where *Division of Labor* is an emergence theory of moral-

ity and of the individual—to the *Elementary Forms*, which uses the theory of social emergence to develop a sociologically-based epistemology.<sup>1</sup>

The concept of social emergence did not originate with Durkheim, but rather was an active current in nineteenth-century French intellectual thought. From Renouvier, Durkheim borrowed the axiom that the whole is greater than the sum of its parts; from Boutroux, the idea that each level of analysis is irreducible to the lower levels, because of the “contingency” of natural laws (Boutroux [1874] 1916; Durkheim [1907] 1982:259; Durkheim 1909–1912:326). Durkheim was also influenced by an early year spent in Germany, where organicism was dominant; this experience cautioned Durkheim to avoid the metaphysical assumptions and the excessive biological analogies of organicism (see Giddens 1970). Perhaps more than any other source, Durkheim was influenced by Comte’s anti-reductionism. Comte also struggled with social emergence, and is as often misunderstood on this point as is Durkheim.<sup>2</sup>

Durkheim’s theory of emergence contains several components, including most of his key theoretical concepts: social facts, collective representations, social currents, dynamic density, social milieu, social substratum, and *sui generis*. Durkheim never used the term “emergence”; rather, his phrase *sui generis* was used in a sense synonymous with contemporary uses of the term “emergent.” Following common usage in the nineteenth century, Durkheim also used the terms “synthesis” and “association” when referring to emergent systemic phenomena that resulted from nonadditive combinations of elements.<sup>3</sup> To demonstrate his concepts of synthesis and association, Durkheim ([1897] 1951) drew analogies with chemistry:

There is nothing more in animate nature than inorganic matter, since the cell is made exclusively of inanimate atoms. To be sure, it is likewise true that society has no other active forces than individuals. . . . Of course the elementary qualities of which the social fact consists are present in germ in individual minds. But the social fact emerges from them only when they have been transformed by association since it is only then that it appears. Association itself is also an active factor productive of special effects. In itself it is therefore something new. (p. 310)

Both *social facts* and *collective representations* are emergent social phenomena. Both are *sui generis* properties of a social system, emerging from the association of individuals.<sup>4</sup> Durkheim famously defined the social fact to be both *external* and *causal*. His central claim was that sociology could not be an independent science unless its objects of study could be shown to have causal powers: “All that [sociology] asks is that the principle of causality be applied to social phenomena” ([1895] 1964:141). This is the same position that several contemporary philosophers of mind have come to: that “mind” is a meaningless construct, and psychology is an unnecessary discipline, unless there can be “mind-brain” downward causation.

<sup>1</sup>See Rawls’s (1996) argument that *Elementary Forms* presents a sociological epistemology. Her interpretation is compatible with my presentation here, although she does not draw on the concept of emergence. The emergence basis of Durkheim’s epistemology is stated most explicitly in the introduction and conclusion chapters of *Elementary Forms*.

<sup>2</sup>Durkheim himself was confused by these ambiguities. In the *Rules*, Durkheim read Comte as a reductionist ([1895] 1964:99), even though his professor Boutroux thought Comte was nonreductionist (Boutroux [1893] 1914:193); by 1903, Durkheim had decided that Comte was not a reductionist ([1903] 1982:178; [1907] 1982:259).

<sup>3</sup>Note Durkheim’s ([1900] 1960) critique of Simmel’s concept of “association,” which demonstrates that Durkheim’s usage of this term is emergentist.

<sup>4</sup>The preface to the second edition of *Rules*, first published in 1901, made clear that collective representations were social facts; the essence of both concepts was their *sui generis* nature (see also [1912] 1915:263–64).

In fact, in “Individual and Collective Representations,” Durkheim anticipated the key elements of contemporary philosophical arguments that intelligence and consciousness can be analyzed as emergent from the interactions of the neurons of the brain. Durkheim noted that “[Individual minds] are compounds” ([1898] 1953:320) and that “Not without reason has it been said that the self is itself a society” (p. 111). He noted that mental emergents are caused by neuronal activity, and that they also exert downward causation on those neurons: “They are caused, but they are in their turn causes” (p. 4). Otherwise, “Ideas have no power” (p. 10). Reductionist analysis is inappropriate because the combining elements are changed by their association (p. 11). Durkheim’s argument here is analogous to nonreductionist theory in contemporary philosophy of mind, which holds that mental phenomena are emergent from neuronal interaction, yet are not epiphenomenal, in that they can be said to be causal antecedents.

Durkheim, of course, was interested in the emergence of mind only indirectly: as a way to argue by analogy that an emergentist theory of sociology was just as scientific as psychology. Durkheim ([1898] 1953) realized that analogous threats of reductionism faced both sociology and psychology; he argued that if psychological phenomena exist, then so must social phenomena:

Each mental condition is, as regards the neural cells, in the same condition of relative independence as social phenomena are in relation to individual people. . . . Those, then, who accuse us of leaving social life in the air because we refuse to reduce it to the individual mind have not, perhaps, recognized all the consequences of their objection. If it were justified it would apply just as well to the relations between mind and brain. (p. 28)

The central theme of the essay is based on this emergence argument. Just as individual representations have no necessary link to the science of the neuron, collective representations have no necessary link to the science of the individual. Thus, “there is between psychology and sociology the same break in continuity as between biology and the physiochemical sciences” ([1895] 1964:104). Collective representations are of a qualitatively different nature than individual representations, because they are emergent social facts. In opposition to this emergentist reading, some critics argue that Durkheim used Renouvier’s term “representation” because he intended the concept to have a psychologistic connotation (e.g., Jones 1995:30–33; Schmaus 1999; Turner 1995). For example, Schmaus (1999) writes that “Durkheim originally conceived collective representations as a type of mental entity shared by the members of a society” (p. S315). Such readings are hard to maintain in light of Durkheim’s 1898 essay (as Némédi 1995 also argued, pp. 48–50).

Like today’s complexity and systems theorists, Durkheim realized that his emergence argument required him to focus on networks of people and their interactions: “*The first origins of all social processes of any importance should be sought in the internal constitution of the social group*” ([1895] 1964:113, original emphasis). Durkheim referred to this “internal constitution” using the terms *social milieu* and *social substratum*, with the latter term replacing “milieu” in *Suicide* and thereafter.<sup>5</sup> In *Rules*, Durkheim defined the milieu as an emergent system: it is characterized by its *size*, or the “number of social units,” and its *dynamic density*, or “degree of concentration”—the number of individuals who have “social relations” ([1895] 1964:114). Although the milieu includes only physical things

<sup>5</sup> Durkheim also used the term “substratum” to describe, by analogy, emergence at other levels of analysis: thus, his discussions of psychic and physiological substrata. For a similar take on “substratum,” see Némédi (1995:45–46).

and persons, neither can be seen as the causal origin of change; rather, “as an active factor, then, the human milieu itself remains.” The source of system change lies in properties of the network connections among the units of the system itself. Durkheim defined the substratum in the same terms as the milieu; the substratum was defined by the size and space of the land occupied, the number and density of the population, “secondary groupings” such as population centers, and technologies influencing the density of connections such as roads, walls, and architecture ([1900] 1960:360–61).

The concepts of material density and dynamic density are structuralist notions, and serve the same theoretical function within a theory of emergence. Both notions foreshadow the emphasis on density of connections in today’s social simulations.<sup>6</sup> As dynamic density increases, the conditions for emergence also increase: “[Social life] is thus the more intense the more the reactions exchanged between its component units are themselves more frequent and energetic” ([1893] 1984:277). But this frequency and energy can’t originate from within individuals, because they are themselves a product of society. Instead, they depend on the “number of individuals who have entered into relationships, and . . . the volume and density of society” ([1893] 1984:278).

Durkheim realized that not all social systems manifest the same degree of emergence: “Social facts lend themselves more readily to objective representation in proportion as their separation from the individual facts expressing them is more complete” ([1895] 1964:44). In his definition of the social milieu—the substratum of society—Durkheim identified the same variables currently considered to contribute to emergence: the social milieu manifests emergence to the extent that it has a sufficient number of units, and has a sufficient density of interconnections. Similarly, today’s connectionists and artificial life researchers hold that emergence is likely to be found in systems with two characteristics: large numbers of components interacting, and a complex communication system among the components (Sawyer 1999).

The exploration of which systems will manifest emergence has been a central concern of contemporary complexity theory (Bechtel and Richardson 1993; Sawyer 1999). For example, Bechtel and Richardson (1993) argued that emergent systems do not demonstrate many of the characteristics of reducible systems: direct localization, near decomposability, functional and physical independence of units, and linearity. In contemporary terms, social systems with a high dynamic density are less likely to be decomposable or localizable. Durkheim realized that mental phenomena do not display direct localization or near decomposability: “If we concede that ideas can be decomposed into parts, we should have to admit further that to each of the parts corresponds a particular neural element. . . . Such a geography of the brain belongs to the world of the novelette rather than to that of science” ([1898] 1953:12). Note the parallels with Fodor’s argument on the impossibility of reducing the natural kind terms and laws of psychology to the natural kind terms and laws of neurobiology.

Reading Durkheim as an emergence theorist clarifies an ambiguity in Durkheim’s concept of the individual. His emergence arguments seem to posit a utilitarian conception of

<sup>6</sup>In *Division of Labor* Durkheim’s emergence argument was based on material density, whereas in *Rules* he elaborated this notion into the theoretically more powerful concept of dynamic density. Durkheim felt that his shift in terminology was a rather minor adjustment, and this claim is not problematic from the perspective of emergence theory, which requires a focus on the density of connections (as in both Alife and multi-agent systems models), not only on the geographic proximity of agents. Some critics have interpreted his shift from material density to dynamic density as a substantive theoretical shift, but such interpretations result from the imposition of a voluntaristic action perspective onto Durkheim, as I discuss below. For example, Alexander (1982:220) misinterprets the concept of dynamic density, reading it as “a moral and emotional fact,” and claims that it was evidence of a shift toward idealism.



the individual, associated with Spencer, that he has already rejected ([1893] 1984:286); yet he argued that the individual is constituted by society.<sup>7</sup> Although some scholars (e.g., Giddens and Alexander) view this as a contradiction, this dialectic is found in all complex systems with emergence and downward causation. For example, mental phenomena emerge from neuronal interaction, yet via mental causation, neurons can be affected by mental phenomena. The causal power of mental phenomena does not require a “theory of the neuron”; rather, it is theorized in what sociologists would consider to be purely structural terms—in terms of the networks of connections, the density of the network, and the nature of the communication among neurons.

In sum, Durkheim, *avant la lettre*, outlined a theory of complex systems, one that he believed applied not only to the social level, but also to the chemical, biological, and mental levels. Only in this sense can his many analogies with these other sciences be substantively understood.

### CRITIQUES OF DURKHEIM'S THEORY OF EMERGENCE

Many Durkheim interpreters who have commented on his theory of emergence do so only to dismiss it. In their brevity and their interpretation, these readings misunderstand the import of Durkheim's emergence argument. I will briefly comment on the interpretations of Giddens, Lukes, and Alexander.

Giddens states that the *Rules* “is the weakest of Durkheim's major works” (1977:292) and dismisses Durkheim's emergence argument in a few brief pages (1984:169–74). Giddens's dismissal of Durkheim's theory of emergence is based on his claim that Durkheim alternated between two incompatible conceptions of the individual. He argues that Durkheim's notion of emergence was based on an assumption that human actors exist in separation from one another and then come together “*ex nihilo* to form a new entity by their fusion or association,” just as hydrogen and oxygen molecules come together to form water (1984:171). Giddens argues that the analogy with chemical emergence “only works for those very types of perspective Durkheim set out to criticize, such as utilitarian individualism. If individuals, as fully formed social beings, came together to create new social properties by the fact of their association, as in contract theories of society, the analogy might hold; to support Durkheim's case, it does not” (1979:51).

However, the theory of emergence does not require a Spencerian notion of the presocial individual; Durkheim's emergence theory was meant to apply regardless of one's conception of the individual. These apparent ambiguities in Durkheim's concept of the individual do not substantively impact his emergence argument. Of course, Giddens was committed to an interpretivist view of individual agency in sociological theory, one that prevented him from considering any sociological theory that did not take individual subjectivity into account, and that equally prevented him from granting any independent status to social structure. As Cohen writes in his overview of structuration theory, a practice orientation “entails dispensing with all arguments for the emergence of social patterns . . . *the routine repetitions of institutionalized modes of interaction between agents is not something apart from the patterns they form*” (original emphasis, 1989:76–77).

Within Giddens's structuration theory, Durkheim's two concepts of the individual represent a substantive ambiguity; but within Durkheim's own emergence theory, there is no substantive issue, because the individual's subjectivity is not relevant to the emergence

<sup>7</sup>This opposition is subtly different from the “homo duplex” issue also noted by Durkheim: the opposition between man's physical and social/moral aspects (Durkheim [1914] 1960).

argument. Durkheim acknowledged the importance of studying how individuals internalize social facts—in this, he granted more to individualism than today's structuralists. Nonetheless, the emergent social fact is independent of any individual's internalization of it or subjective orientation toward it. Note again that the nonreductive physicalist argument holds regardless of one's model of the neuron.

In another critique of Durkheim, Lukes—who, instead of the term “emergence,” uses Durkheim's term *sui generis*—is dismissive of Durkheim's argument, and addresses this aspect of Durkheim only in isolated passages. Lukes correctly notes that the dichotomy between the social and the individual is “the keystone of Durkheim's entire system of thought” (1973:22), but his dismissal of the emergence argument leads him to underestimate the overall coherence of Durkheim's project, and like Giddens, to perceive ambiguities that were not substantive for Durkheim (1973:20–21). Regarding the possibility of a *sui generis* sociology, Lukes refers to Durkheim's “shaky argument” by analogy with mental phenomena (1973:233), and calls Durkheim's writings on the point “indecisive,” “highly ambiguous” (1973:228), and “conceptually confused” (1973:20), concluding that the project was misconceived and “must remain frustrated” (1982:23). Lukes believes that Durkheim's analogies with chemical and mental phenomena were not drawn for substantive theoretical reasons, but rather from a misguided desire to seem more scientific. But emergence theory makes clear that these were substantive analogies; in fact, recent philosophy of biology has also drawn on the concept of emergence, in developing the now-mainstream position of *physicalist anti-reductionism* (Bechtel and Richardson 1993; Hoyningen-Huene and Wuketits 1989; Rosenberg 1997).

Alexander, in Volume 2 of his *Theoretical Logic in Sociology*, fails to mention emergence or *sui generis*, and this neglect leads him to misunderstand Durkheim's theory of the social fact. Alexander, like Giddens, notes an ambiguity in Durkheim's concept of the individual. Is it the utilitarian atomism of Spencer? Alexander attributes this perspective to the early Durkheim. Is it a voluntaristic notion, as in Parsons's ([1937] 1949) seminal reading? Alexander reads the Durkheim of the *Rules* as indicative of a shift to a voluntaristic action theory of the individual, and as advocating that social facts are subjective and internal (1982:217, 464 n35). When Durkheim described the emergence substrate of social facts as “religious denominations, political, literary, and occupational associations,” Alexander interprets these terms to be subjective individual factors, when in an emergence account these terms have a classically structuralist meaning: they are properties that affect the dynamic density of the social milieu. Similarly, he cites Durkheim's use of the term “collective sentiment” in support of his voluntarist reading; yet in an emergence account, this term refers to a uniquely structural and nonindividualist fact (e.g., “if each individual consciousness echoes the collective sentiment, it is by virtue of the special energy resident in its collective origin” [1895] 1964:9). Among Durkheim scholars, Alexander proposes one of the most individualistic readings of Durkheim's *Rules*, saying that “The critical point is that each of these examples of structure . . . is subjectively formed . . . from the stuff of human emotions” (1982:218–19). However, the language of “emotions” that Alexander quotes are intended by Durkheim to refer to properties of collectives, and not to properties of individuals.<sup>8</sup>

Durkheim frequently used the apparently psychologistic terminology of emotions, sentiments, and ideas to refer to social facts. These psychologistic terms have often led

<sup>8</sup>Alexander was aware of competing interpretations; see the two-page extended footnote (1982:469–70 n82). Yet here, his dismissals of structuralist readings of Durkheim are not directed at emergence interpretations, but are directed at materialist readings of Durkheim that compare him to Marx.

readers to assume that Durkheim was making psychological claims when in fact he was describing strictly social facts. As I argued above, many scholars make the same mistake regarding Durkheim's extension of Renouvier's term "representation" to refer to both collective and individual phenomena. Durkheim ([1912] 1915) was fairly explicit on this point through the *Elementary Forms*: "This synthesis [*sui generis* emergence] has the effect of disengaging a whole world of sentiments, ideas, and images which, once born, obey laws all their own . . . these combinations are not commanded and necessitated by the condition of the underlying reality [individual consciousnesses]" (p. 471).

In a theory of social emergence one can logically speak of the emotions, sentiments, and ideas of a collective without implying anything about the participating individuals. It would have been less ambiguous had Durkheim coined completely new terms to refer to the emergent properties of collectives, but this was not his choice. This choice of terminology perhaps makes it easier for those with individualist orientations to misinterpret Durkheim's emergence argument, reading into Durkheim ambiguities that are issues within a voluntarist theory of action, but not in a theory of emergence.

#### RESOLVING DURKHEIM'S DILEMMA: TOWARD A SOCIOLOGY OF EMERGENCE

I have argued that emergence processes are central to Durkheim's empirical and theoretical projects, and that sociologists have neglected this aspect of Durkheim's work. Several contemporary sociological theories have appealed to the concept of emergence in arguing for the independence of a social level of analysis, including the neo-Durkheimian structuralism of Blau (1981), the morphogenetic dualism of Archer (1982, 1995), the social realism of Bhaskar ([1979] 1998), and the Marxian concept of social structure proposed by Porpora (1993). These theorists use emergence to accomplish the same theoretical function as Durkheim's concept of *sui generis*: to explain how a social level of analysis could result from individual actions, and yet take on a seemingly independent existence. In the following sections, I show how Durkheim's writings on emergence can contribute to this line of contemporary sociological theory.

#### *How Do Social Facts Have Causal Powers Independent of Individual Agency?*

Causation is a major theme in Durkheim scholarship, from concern with the implementation mechanisms whereby collective representations constrain individuals, to concern with the epistemological underpinnings of Durkheim's statistical method (e.g., Némedi 1995; Porter 1995; Schmaus 1994; Turner 1986, 1996). The emergentist reading provides a new perspective on Durkheim's concept of causation. Many sociologists believe that Durkheim presented a mechanistic and deterministic sociology. Indeed, in the *Rules* Durkheim described the causal force of social facts primarily in coercive terms. After the publication of *Rules*, several critics attacked this notion of coercion, including an unfortunate misreading by Tarde, who interpreted coercion strictly in terms of explicit power relations.<sup>9</sup>

<sup>9</sup>Tarde reads Durkheim to be implying that an explicit coercive relationship—like the battle's victor over the vanquished—is highly social, whereas the spontaneous conversion of a people to a new religion is not social because it is not coercive. Tarde finds this so ridiculous that he can barely contain himself: "The error is so palpable that we must wonder how it could arise and take root in a mind of such intelligence" (1969:118). Of course, this was never Durkheim's concept of coercion.

In response to criticisms of the *Rules*, Durkheim further clarified his meaning of “constraint” ([1897] 1951:307–20; [1901] 1964:liii–lvi). Yet in spite of his repeated attempts at clarification, Durkheim is still criticized for providing ambiguous senses of coercion (Giddens 1977:280–82; Lukes 1973:20–22; cf. Rawls 1996:471 n23). Giddens argues that Durkheim’s notion of social fact conflates two types of constraint: factual constraints deriving from the material world, and moral obligations (1977:280–82). Because Giddens’s theory is foundationally based on subjectivist elements, these two forms of constraint seem radically distinct; yet Durkheim always maintained that this distinction was superficial, because all forms of constraint share the key property that they derive from emergent collective phenomena. In the *Rules*, for example, Durkheim distinguished between the coercive force of the social fact and the individual’s psychological internalization of it: “Inhibition is, if you like, the means by which social constraint produces its psychological effects; it is not identical with this constraint” ([1895] 1964:102). Giddens’s perceived ambiguities only appear if one attempts to read Durkheim through the eyes of an individualist.<sup>10</sup>

Although he used the terminology of coercion, Durkheim realized that social constraint occurred within a dialectic between downward causation and emergence processes. Within an elaborated emergence theory, Durkheim’s concept of constraint can be reformulated as downward causation, a form of constraint that is simultaneously undergoing processes of emergence (as in the realist theories of Bhaskar [1979] 1998 and Archer 1995). In this sense, social facts constrain individuals, but at the same time they emerge from the actions and interactions of those very same individuals. Even in the *Elementary Forms*, Durkheim ([1912] 1915) remained focused on this dialectic: “Social life, just like the ritual, moves in a circle. . . . On the one hand, the individual gets from society the best part of himself. . . . But, on the other hand, society exists and lives only in and through individuals . . . society . . . cannot do without individuals any more than these can do without society” (p. 389).

As Durkheim observed in 1898, arguments for mental causation in the philosophy of mind can be used to develop an account of social causation that does not require a theory of the individual, subjectivity, or agency (cf. Sawyer forthcoming). Emergent social structure may constrain individuals, apart from any consideration of the subjective states of actors, even though that structure has no distinct ontological status.

### *Social Dynamics as Emergence Processes*

Durkheim’s social dynamics was an emergentist version; this becomes clear in his critique of prior social theories of historical stages. Comte, Spencer, and Marx attributed the onset of each new stage to causal factors in the prior stage. In response, Durkheim ([1895] 1964) argued that causality cannot proceed directly from one historical stage to the next: “It is impossible to conceive how the stage which a civilization has reached at a given moment could be the determining cause of the subsequent stage” (p. 117). Causation does not work from the past to the present; it must be between two co-occurring factors. Thus, Durkheim argued that sociology must explain contemporary social facts by reference to “concomitant circumstances.” Drawing on his emergence insight, Durkheim ([1895] 1964) proposed that new stages emerge from lower-level, simultaneous factors: the *social milieu*. Durkheim held that the social milieu was the “determining factor of collective evolution” and argued that without incorporating such factors “sociology cannot establish any rela-

<sup>10</sup>Turner makes this same point regarding Lukes’s and Giddens’s criticisms (1986:126–27).

tions of causality” (p. 116). In the conclusion to *Rules*, Durkheim ([1895] 1964) again emphasized that sociological explanation must proceed from social milieu to social phenomena: “We have shown that a social fact can be explained only by another social fact; and, at the same time, we have shown how this sort of explanation is possible by pointing out, in the internal social milieu, the principal factor in collective evolution” (p. 145).<sup>11</sup>

This emphasis on emergence from the social milieu—or what he later called the social substratum—remained central to Durkheim’s method for the rest of his career (cf. Turner 1986:142–43). However, Durkheim never developed this perspective into a full-fledged processual-dynamic view of social emergence. He reasoned that many social facts were stable structures—institutions like law and government—which had emerged long ago; consequently, the processes of their emergence could not be directly studied. Thus Durkheim’s empirical studies, in both *Suicide* and *Elementary Forms*, took as a given the social structures that had emerged, and focused on their reproduction and their causal powers over individuals.

This was Durkheim’s concern with the “problem of order”: how social structures, once emerged, were reproduced and maintained over time. Because of this focus on the reproduction of social order rather than change, conflict, or transformation, Durkheim is often considered to have focused on social statics to the neglect of social dynamics. However, Durkheim’s thinking on the problem of order was fundamentally grounded in his emergence theory of structural etiology. Many interpreters have been misled by Durkheim’s focus on reproduction—reading him to locate the source of order in individual internalizations of social facts, following Parsons’s voluntarist reading and the general individualism of American sociology. If one’s theory of reproduction is grounded in a theory of structural emergence, then that theory does not necessarily require a theory of individual agency, as suggested both by analogy from the philosophy of mind, and by the existence of computer simulations of society in which macrosocial order emerges and then is maintained over time via the same emergence processes.

For Durkheim, emergence processes were central not only to the origin of social structure, but also to its continued maintenance and reproduction. The role of emergence processes in reproduction has been quite confused in contemporary sociological theory. In her seminal 1982 critique of structuration theory, Archer criticizes structuration theory for conflating two types of mechanisms, and calling both of them “reproduction”: the stable replication of existing social order, and the genesis of new social forms (p. 479). In this case, structuration theory has the more Durkheimian insight: both processes involve a dialectic between emergence processes and downward causation.

If Durkheim had retained his earlier focus on the processes whereby social structure emerges from the individual level, it would have complemented his empirical focus on the downward causation of the social structure, and this combined theory could better account for dynamics such as change and conflict over time. It remains unclear how Durkheim would have developed a more sophisticated emergence approach to social dynamics.<sup>12</sup> One can hardly fault Durkheim for failing to resolve this complex and challenging issue, one that remains unresolved.

<sup>11</sup>Durkheim did not deny the possibility of history, only that history as science would be indistinguishable from sociology, because it would incorporate analysis of the concomitant substratum factors that give rise to social facts. This is what underlay Durkheim’s claim that there could not be historical causal laws (see [1898–1899] 1960:345–48).

<sup>12</sup>Turner (1986:160) also noted that Durkheim never successfully identified laws of this type, apart from *Suicide*.

*Emergence in Microinteraction*

The theory of emergence helps us to understand two Durkheimian concepts that have been widely misunderstood: the notions of *social currents* and *crystallization*.<sup>13</sup> Social currents are social facts that are not yet crystallized. “All sorts of currents come, go, circulate everywhere, cross and mingle in a thousand different ways, and just because they are constantly mobile are never crystallized in an objective form” ([1897] 1951:315). Examples of social currents include joyous confidence, individualism, philanthropy, and cosmopolitanism. “But because this part of collective life has not enough consistency to become fixed, it none the less has the same character as [material social facts]. *It is external to each average individual taken singly*” (p. 316, original emphasis). Durkheim felt that social currents were not qualitatively different from fixed, objective social facts, such as types of architecture, communication and transportation networks, and technology (e.g., [1895] 1964:12, 45).

An example from linguistic anthropology is instructive. Certain ways of talking and speech styles of a people constitute a social current. Over time, a stable oral tradition may emerge from such linguistic behavior, resulting in performance texts that have a high degree of stability even though they are never written down. These oral traditions are crystallized social currents. When such a performance takes on an objective material form—for example, by being transcribed into a ritual text, or by becoming designed into the architecture of a ritual space—Durkheim called it a *materialized* social fact. Durkheim argued that the nature of the crystallized social fact is the same whether or not it is materialized; thus, whether or not such an emergent performance text is ever written down is not relevant to the sociologist ([1897] 1951:313–16).

Regardless of the validity of this theoretical claim, Durkheim believed that the only scientific methodology available to sociology was to study materialized social facts. Ultimately, sociology would also be a science of social currents; but Durkheim could not conceive of a scientific methodology that would allow their study. Thus Durkheim ([1895] 1964) never extended his methodology to microsociological processes. However, because social currents are not qualitatively different from crystallized social facts, the study of the latter can indirectly provide us with an understanding of the former:

Social life consists, then, of free currents perpetually in the process of transformation and incapable of being mentally fixed by the observer, and the scholar cannot approach the study of social reality from this angle. But [a current can crystallize] without ceasing to be itself. . . . Since, on the other hand, these practices are merely social life consolidated, it is legitimate . . . to study the latter through the former. (p. 45)

Given that one of Durkheim’s theoretical goals was to study emergence processes—how interactions among individuals within the substratum (or social milieu) give rise to social currents—the only way to study these directly would be to closely study symbolic interaction. This study requires technological devices that were not available to Durkheim—the technology to record social interaction, including audio and video recording devices. Unlike in Durkheim’s time, video and audio recordings now allow us to study the emer-

<sup>13</sup>For example, Lukes writes that *Suicide* is not about social currents, even though Durkheim presented it in these terms (Lukes 1973:36); Lukes dismisses terms like “current” and “crystallization” as “distinctly inappropriate analogical language” (p. 215). In his introduction to the 1982 translation of *Rules*, Lukes suggests that the term crystallization be replaced with “institutionalization” (Lukes 1982:5), and “social current” is translated as “social force” (e.g., p. 82). My interpretation in this section partly explains my choice to use the 1938 translation by Solovay and Mueller.

gence of social currents from symbolic interaction in the social milieu. These microprocesses can be studied with contemporary microsociological methods, including those of ethnomethodology, conversation analysis, and symbolic interactionism.

Communication among individuals has changed dramatically with new media technologies, including radio, television, and more recently, the Internet. Mass media play a significant role in the formation, maintenance, and documentation of social currents. Through such mass media, large-scale social currents—communication among individuals in the social milieu—leave traces that can be directly analyzed. The emergence and maintenance of these social currents could be studied using methods from communication research and cultural studies.

It is unclear why Durkheim maintained that social facts did not change substantively once they were crystallized. He provided neither theoretical argument nor empirical evidence in support of this claim. To develop a complete theory of emergence, we need to extend Durkheim by theorizing how emergence leads to both intersubjectively shared social emergents (social currents) and objective, material social emergents. Empirical study may reveal that there are qualitative differences in emergence and downward causation.

Durkheim hinted at the need for the close study of symbolic interactional processes in *Elementary Forms* in his discussions of “collective effervescence” (e.g., [1912] 1915:250–60). Durkheim stated that the “religious idea” is born out of participation in ritual activities. In these events, “the collective life has been able to attain its greatest intensity and efficacy” (p. 251). Durkheim suggested that these events result in a “pseudo-delirium” that especially contributes to the creation of collective representations (p. 260). New ideas and new gods emerge during periods of “creative effervescence” (p. 475), and rituals are a way of reliving these emergence events. To identify what makes these interactional performance events particularly social requires a theory of symbolic interactional processes.<sup>14</sup>

### *Social Ontology*

Despite his explicit denials, Durkheim has often been read to be proposing that society is a distinct ontological entity. In the *Rules*, Durkheim perhaps went farther than necessary in claiming an existence for social facts.<sup>15</sup> After the 1895 publication of *Rules*, Durkheim was widely attacked for seeming to hypostatize structure; Tarde perceived this as his weakest point, and called it Durkheim’s “ontological illusion” (1969:115). In response to these criticisms, Durkheim backed down from his initial statements (e.g., in the Preface to the second edition of *Rules*).

Downward causation, Durkheim realized, is an essential property of society, if sociology is to avoid reduction to psychology. However, many emergents don’t have causal effects; they are only epiphenomenal. As we saw above, the “V” shape of the bird flock does not exert any downward causation on the birds; they are aware only of the local interactions with other birds. This was Tarde’s attack: How can an emergent exert downward causal force if it is merely epiphenomenal? In response to Tarde’s attacks, Durkheim clarified that his position was not an ontological one; he did not think that societies existed apart from individuals. “There is nothing substantial or ontological about this substratum

<sup>14</sup>Rawls (1996:477–78) also argues that Durkheim perceived symbolic interaction to be central to his broader theory. Compare Stone and Farberman (1967).

<sup>15</sup>In part, this was to distinguish his argument from Comte’s position, which was an epistemological argument for the necessity of sociology rather than an ontological one. Although Comte famously wrote “A society therefore can no more be decomposed into individuals, than a geometric surface can be resolved into lines, or a line into points” ([1854] 1966:153), he also believed that “the day may come” when sociology could be reduced to biology, and when it did, “biology will be seen to afford the starting-point of all social speculation” ([1842] 1854, Vol. 2:81, 112).

[all the individual consciences in union and combination], since it is merely a whole composed of parts” ([1897] 1951:319). Yet, throughout his career, Durkheim maintained that social facts have causal powers over individuals. In the *Elementary Forms*, Durkheim argued that “the collective consciousness acts upon individual consciousness” ([1912] 1915:254), and that society contains “forces outside of and superior to the individual” (p. 257).

Durkheim never completely resolved how a nonexistent entity could have causal powers over the individual, and this led him to continue to make ambiguous statements about the existence of the social. Again in the *Elementary Forms*, there are passages that seem to hypostatize the social (“society is not made up merely of the mass of individuals who compose it . . . but above all is the idea which it forms of itself,” p. 470), and passages that deny the social exists apart from individuals (“The collective force is not entirely outside of us . . . since society cannot exist except in and through individual consciousnesses,” p. 240). Although he maintained that social structure did not actually exist apart from the composing individuals, he never explained how a nonexistent structure could have causal powers; thus the common criticism that Durkheim reified or hypostatized structure, and the concern among Durkheim scholars with social causation.

To defend the existence of sociology, it would be sufficient to provide an epistemological argument that demonstrates that social facts can never be explained by analysis at lower levels. Even if social facts are really nothing more than individuals and their interactions, one could nonetheless argue on epistemological grounds against the possibility of reduction of social laws, concepts, and theories to individual laws, concepts, and theories. There are points at which Durkheim ([1895] 1964) seems to be arguing for such an epistemological nonreductionism, acknowledging that science might eventually be capable of a reductionist explanation of social facts: “If this exteriority should prove to be only apparent, the advance of science will bring the disillusionment and we shall see our conception of social phenomena change” (p. 28).

Durkheim conflated the ontological and epistemological emergence arguments; thus, he left himself open to the charge of proposing a dualist social ontology. Perhaps he was not certain that epistemological anti-reductionism alone was sufficient to defend sociology from reduction to psychology. Today’s structural sociologists are struggling with the same issue, with many arguing for the complete irrelevance of any science of the individual level (e.g., Mayhew 1980), and likewise being accused of hypostatizing social structure.

A theory of emergence in sociology does not have to argue for a dualistic ontology to make the argument for structural sociology and against individualism. Archer (1982:458) takes an epistemologically nonreductionist position in proposing that sociologists must accept an “analytical dualism” when considering both structure and action; this stance can be enhanced by appeal to philosophical arguments summarized above. Nonreductive physicalism is materialistically monist. Yet its advocates argue that psychological terms, laws, and concepts may never be reducible to the terms, laws, and concepts of neurobiology. Similarly, Durkheim argued that although only individuals exist, the science of society may, of necessity, always be independent of the terms, laws, and concepts of the sciences of the individual.

### *Integrating the Individual and Social Structure*

Unlike Marx, Durkheim did not think that sociology would make psychology obsolete. Durkheim even suggested that psychological study would be helpful for a budding sociologist ([1895] 1964:111). But although Durkheim did not deny a place for psychology, he repeatedly argued that there could be no systematic relationships between phenomena at



the two levels. Many of Durkheim's critics have regarded this as his major theoretical failing (e.g., Lukes 1973:228). These critics argue that Durkheim's lack of concern for the individual led him to alternate between two conceptions of the individual: a utilitarian, instrumentalist one that is borrowed from Spencer, and a more idealistic, voluntaristic, subjectivist conception of the individual (Alexander 1982:220; Giddens 1977:283–89; Parsons [1937] 1949:367–68). In *Division of Labor*, Durkheim criticized Spencer, arguing that the individual himself was created by society, and thus Spencer's utilitarian atomism could not be correct: it could not be the case that presocial individuals came together and created society ([1893] 1984:286). His main theoretical claim in *Division of Labor* was that the individual was a product of social organization, not a cause of it (e.g., p. 277). The onset of the division of labor, and the resulting organic solidarity, requires a transformation of the individual (p. 284). Society was created—through emergence processes that Durkheim largely attributed to the structural properties of the social milieu, its size, and dynamic density—and then created the individual. Many interpreters of Durkheim have argued that his rejection of Spencerian atomism implies a subjective, voluntaristic agent.

Durkheim acknowledged that emergence requires individuals. He frequently commented on the dual nature of man, most explicitly in 1914: "It is, therefore, quite true that we are made up of two parts . . . the one purely individual and . . . the other social" ([1914] 1960:337). However, Durkheim did not resolve the dialectic between social structure and this newly-emergent, modern individual; this dialectic requires that the theory of emergence become a dialectic theory, including the emergence of the social from presocial individuals, the downward causation (or "constraint") of the social on the individual, and then how these newly social individuals result in modified emergence processes. Although Durkheim acknowledged in several passages that this is the case ([1893] 1984:285, 287, 288 n16), he never fully developed a theory of this dialectic, perhaps out of fear of yielding too much to psychological reductionists such as Tarde. Thus there is continuing debate among Durkheim scholars concerning the role of intentional states of individuals and their internalizations of social facts and collective representations.

This dialectic—of the emergence of the social order, downward causation to individuals, and the continued reproductive emergence of order—is extremely complex, and a complete analysis of these historical processes is a difficult task. Durkheim completed portions of this analysis in all of his empirical works. In his first work—*Division of Labor*—Durkheim first identified the emergence processes that gave rise to social differentiation—the material density of the society—and then explored the processes of downward causation whereby that social differentiation created the modern "cult of the individual." Similarly, in his last work—the *Elementary Forms*—Durkheim proposed an epistemology that explained the origin of Kantian categories in the social structure. The primary empirical focus of this work was to delineate the processes of downward causation: how religion, and the very categories of thought, were caused by different social structures. "[The categories] should depend upon the way in which [the group] is founded and organized, upon its morphology" ([1912] 1915:28). To empirically demonstrate this, Durkheim conducted a comparative study, showing how different social organizations are regularly correlated with different religious forms. The missing component of this last study was the documentation of emergence processes themselves: How did the different social structures originate? Durkheim implicitly assumed the emergence theory of the *Division of Labor*: the social structure emerges from the dynamic density of the social milieu. For example, in his conclusion, Durkheim proposed that "international life" is now resulting in "universalizing religious beliefs" (e.g., [1912] 1915:474, 493). Durkheim seemed to suggest that the size and the dynamic density of society had expanded to encompass all of humanity, resulting in a maximum, thus a logical endpoint of historical development.

What remains missing from Durkheim's empirical accounts is an analysis of the continuing process of this dialectic once the individual has resulted from society. What are the detailed, objectively observable mechanisms and processes whereby individuals create societies and societies create individuals? How does this new type of individual result in further, and probably more complex, forms of emergence (cf. Archer 1995)? How do emergence processes themselves change, once individuals have been transformed by the creation of these categories of thought? The degree of this transformation would affect the degree to which emergentist arguments from the philosophy of mind could be successfully applied to sociology.

## CONCLUSION

I have argued that Durkheim must be read as an emergence theorist, and that such a reading helps to clarify several difficult and confusing aspects of his work. Throughout his career, one sees him consistently arguing for a sociology of emergence processes. Even as he focused on the problem of order—how structures are maintained and reproduced over time—his underlying theoretical perspective on these processes was essentially an emergentist one.

Drawing briefly on the philosophy of emergence, I discussed several commonly misunderstood aspects of Durkheim's theory. When Durkheim's sociological project is unified around the concept of emergence, the *Rules* becomes a central, seminal text, and there is not a fundamental shift from an early to a late Durkheim.

Thus we return to Durkheim's dilemma: Do social phenomena exist? There are two nonemergentist responses, associated with the traditional philosophical positions of atomism and holism. Sociological holists, including today's structural sociologists, assume that collective phenomena exist, that they have causal powers over individuals, and that they can't be reduced. The problem, of course, is that many sociologists and nonsociologists alike do not believe that this assumption is valid. In contrast, they hold that collective phenomena are nothing more than actions of participating individuals; such positions include sociological behaviorism, exchange theory, rational action theory, and multi-agent-based models of society.

*Subjectivism* is a variant of individualism in that it argues that the only way to understand social life is to focus on subjective mental states: intention, agency, meaning. Action-theoretic frameworks derived from Weber and Parsons emphasize the role of intention and subjectivity in action; the dominance of such perspectives in American sociology has contributed to misreadings of Durkheim. From the viewpoint of structural sociology, to focus only on mental states is a variant of individualism; yet to posit that these are internalizations of external social structures returns us to the realm of emergence theory.

A sociological theory of emergence provides us with a path between individualism and collectivism. Contemporary emergence theory allows us to retain many of the most useful insights of Durkheim's emergence theory, while elaborating upon them to make them more relevant to contemporary issues in sociological theory. A complete emergence theory would have to distinguish among several different forms of emergence, which Durkheim tended to conflate:

1. The crystallization of social phenomena from social currents
2. The historical emergence of a social stage from a social milieu
3. The emergence of collective representations from the social milieu (Durkheim [1898] 1953:30–31)

4. The emergence of “second degree” collective representations from those that originally emerged from the social milieu (Durkheim [1898] 1953:32)
5. The emergence of larger social groups from combinations of smaller groups<sup>16</sup>
6. The emergence of “secondary groups” from the interactions of individuals with those first-order emergent societies (Durkheim [1898] 1953:24).

Without reading Durkheim as an emergence theorist, it is difficult to properly understand the similarities and differences in these passages. These different types of emergence would have to be distinguished and clarified to elaborate fully a theory of emergence. All of these types of emergence can be theorized so that they are amenable to empirical study. One promising approach is to use techniques of video analysis developed in late-twentieth-century social science, including ethnomethodology and conversation analysis, but also linguistic anthropology, cultural studies, and sociolinguistics. Likewise, for each type of emergent phenomenon, the moment-to-moment processes of downward causation could be documented by this sort of empirical study.

An elaborated theory of emergence, drawing on Durkheim's works and on recent philosophy of mind, has several implications for sociological theory. First, one doesn't need to propose a dualistic ontology to argue against individualism; emergence is consistent with the claim that social properties are supervenient on individual properties. Second, sociological laws and concepts may be constructed as if social structure has causal powers, even if social structure is not ontologically autonomous. Third, one may not need a theory of agency or subjectivity to theorize the causal power of the social, nor to theorize the maintenance and reproduction of the social order. Fourth, sociology can partly proceed without a theory of the individual—as structuralists claim—but can also benefit from integration and coordination with the theory of the individual. To the extent that the individual is theorized as one moment in a dialectic of emergence, this theory of the individual will always remain a sociological concern and not part of psychology.

## REFERENCES

- Alexander, Jeffrey C. 1982. *Theoretical Logic in Sociology, Volume Two: The Antinomies of Classical Thought: Marx and Durkheim*. Berkeley, CA: University of California Press.
- Andersen, Peter Bøgh, Claus Emmeche, Niels Ole Finnemann, and Peder Voetmann Christiansen, eds. 2000. *Downward Causation: Minds, Bodies, and Matter*. Aarhus, Denmark: Aarhus University Press.
- Archer, Margaret S. 1982. “Morphogenesis versus Structuration: On Combining Structure and Action.” *British Journal of Sociology* 33:455–83.
- . 1995. *Realist Social Theory: The Morphogenetic Approach*. New York: Cambridge University Press.
- Bechtel, William and Robert C. Richardson. 1993. *Discovering Complexity: Decomposition and Localization as Strategies in Scientific Research*. Princeton, NJ: Princeton University Press.
- Beckermann, Ansgar, Hans Flohr, and Jaegwon Kim, eds. 1992. *Emergence or Reduction? Essays on the Prospects of Nonreductive Physicalism*. Berlin: de Gruyter.
- Berthelot, Jean-Michel. 1995. *1895 Durkheim: L'Avènement de la Sociologie Scientifique*. Toulouse, France: Presses Universitaires du Mirail.
- Bhaskar, Roy. [1979] 1998. *The Possibility of Naturalism*. 3d ed. New York: Routledge.
- Blau, Peter M. 1981. “Introduction: Diverse Views of Social Structure and their Common Denominator.” Pp. 1–23 in *Continuity in structural inquiry*, edited by Peter M. Blau and Robert K. Merton. Beverly Hills, CA: Sage.
- Boutroux, Émile. [1874] 1916. *The Contingency of the Laws of Nature*. Chicago, IL: Open Court Publishing Company. (Originally published as a dissertation at the Sorbonne in 1874, titled *De la Contingence des Lois de la Nature*.)

<sup>16</sup>As discussed in ([1895] 1964:81–86). For example, “The constituent parts of every society are societies more simple than itself” (p. 81). Note that this is also Comte's conception of emergence: the individual is not the basic unit of emergence, rather, it is the family. See the discussion of the “element” of society in (Turner 1986:113–15).

- . [1893] 1914. *Natural Law in Science and Philosophy*. New York: MacMillan Company. (From lectures presented at the Sorbonne 1892–1893.)
- Brooks, Rodney A. and Pattie Maes, eds. 1994. *Artificial Life IV: Proceedings of the Fourth International Workshop on the Synthesis and Simulation of Living Systems*. Cambridge, MA: MIT Press.
- Chapman, David. 1987. “Planning for Conjunctive Goals.” *Artificial Intelligence* 32:333–78.
- Clark, Andy. 1997. *Being There: Putting Brain, Body, and World Together Again*. Cambridge, MA: MIT Press.
- Clark, Terry N. 1969. “Introduction to On Communication and Social Influence.” Chicago, IL: University of Chicago Press.
- Cohen, Ira J. 1989. *Structuration Theory: Anthony Giddens and the Constitution of Social Life*. New York: St. Martin’s Press.
- Comte, Auguste. [1842] 1854. *The Positive Philosophy of Auguste Comte*. New York: D. Appleton. (Originally published in French in six volumes, from 1830 to 1842.)
- . [1854] 1966. *System of Positive Polity*. New York: B. Franklin. (Originally published in French in four volumes, 1851–1854.)
- Davidson, Donald. “Mental Events.” Pp. 79–101 in *Experience and Theory*, edited by Lawrence Foster and J. W. Swanson. Amherst, MA: University of Massachusetts Press.
- Durkheim, Émile. [1893] 1984. *The Division of Labor in Society*. New York: The Free Press. (Originally published as *De la division du travail social: étude sur l’organisation des sociétés supérieures*. Paris: Alcan, 1893.)
- . [1895] 1964. *The Rules of Sociological Method*. New York: The Free Press. (Originally published as *Les règles de la méthode sociologique*, Paris: Alcan, 1895.)
- . [1897] 1951. *Suicide*. Glencoe, IL: Free Press. (Originally published as *Le Suicide: Étude de sociologie*, Paris: Alcan, 1897.)
- . [1898] 1953. “Individual and Collective Representations.” Pp. 1–34 in *Sociology and philosophy*. Glencoe, IL: Free Press. (Originally published in *Revue de Métaphysique et de Morale*, 6, 1898.)
- . [1898–1899] 1960. “Prefaces to *L’Année Sociologique*.” Pp. 341–53 in *Emile Durkheim, 1858–1917*, edited by Kurt H. Wolff. Columbus, OH: Ohio State University Press.
- . [1900] 1960. “Sociology and its Scientific Field.” Pp. 354–75 in *Emile Durkheim, 1858–1917*, edited by Kurt H. Wolff. Columbus, OH: Ohio State University Press.
- . [1901] 1964. “Author’s Preface to the Second Edition.” Pp. xli–lx. New York: The Free Press. (Originally published as “De la méthode objective en sociologie”, *Revue de synthèse historique*, 2, 1901, 3–17.)
- . [1903] 1982. “Sociology and the Social Sciences.” Pp. 175–208 in *The Rules of Sociological Method*, edited by Steven Lukes. New York: Free Press. (Originally published, with Paul Fauconnet, as “Sociologie et sciences sociales,” *Revue philosophique*, 55, 1903, pp. 465–97.)
- . [1907] 1982. “Letter to the Director.” Pp. 258–60 in *The Rules of Sociological Method*, edited by Steven Lukes. New York: Free Press. (Originally published in *Revue neo-scholastique*, 14, 1907, 612–14.)
- . 1909–1912. Review of Simon Deploige, *Le conflit de la morale et de la sociologie*. *L’Année Sociologique* 12:326–28.
- . [1912] 1915. *The Elementary Forms of the Religious Life*. New York: Free Press. (Originally published as *Les Formes élémentaires de la vie religieuse: le système totémique en Australie*, Paris: Alcan, 1912.)
- . [1914] 1960. “The Dualism of Human Nature and its Social Conditions.” Pp. 325–40 in *Emile Durkheim, 1858–1917*, edited by Kurt H. Wolff. Columbus, OH: Ohio State University Press.
- Epstein, Joshua M. and Robert Axtell. 1996. *Growing Artificial Societies: Social Science from the Bottom Up*. Cambridge, MA: MIT Press.
- Fenton, Steve. 1984. *Durkheim and Modern Sociology*. New York: Cambridge University Press.
- Fodor, Jerry A. 1974. “Special Sciences (Or: The Disunity of Science as a Working Hypothesis).” *Synthese* 28:97–115.
- Gane, Mike. 1988. *On Durkheim’s Rules of Sociological Method*. New York: Routledge.
- Giddens, Anthony. 1970. “Durkheim as a Review Critic.” *Sociological Review* 18:171–96.
- . 1977. *Studies in Social and Political Theory*. New York: Basic Books.
- . 1979. *Émile Durkheim*. New York: Viking Press.
- . 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Berkeley, CA: University of California Press.
- Gilbert, Nigel and Rosaria Conte, eds. 1995. *Artificial Societies: The Computer Simulation of Social Life*. London: UCL Press.
- Goldstein, L. J. [1958] 1973. “Two Theses of Methodological Individualism.” Pp. 277–86 in *Modes of Individualism and Collectivism*, edited by John O’Neill. Hampshire, UK: Gregg Revivals. (Original work published in *The British Journal for the Philosophy of Science* 9(1958).)
- Heil, John and Alfred Mele, eds. 1993. *Mental Causation*. Oxford: Clarendon Press.

- Hinkle, Roscoe C. 1960. "Durkheim in American Sociology." Pp. 267–95 in *Essays on Sociology and Philosophy*, edited by K. H. Wolff. New York: Harper and Row.
- Hoyningen-Huene, Paul and Franz M. Wuketits, eds. 1989. *Reductionism and Systems Theory in the Life Sciences*. Dordrecht: Kluwer Academic Publishers.
- Humphreys, Paul, Fritz Rohrlich, Alex Rosenberg, and William C. Wimsatt. 1996. "Symposium: Emergence and Supervenience: Alternatives to Unity by Reduction." *Philosophy of Science* 64:S337–S384.
- Jones, S. G. Stedman. 1995. "Charles Renouvier and Émile Durkheim: 'Les Règles de La Méthode Sociologique.'" *Sociological Perspectives* 38:27–40.
- Kim, Jaegwon. 1992. "'Downward Causation' in Emergentism and Nonreductive Physicalism." Pp. 119–38 in *Emergence or Reduction? Essays on the Prospects of Nonreductive Physicalism*, edited by Ansgar Beckermann, Hans Flohr, and Jaegwon Kim. New York: Walter de Gruyter.
- . 1993. *Supervenience and Mind*. New York: Cambridge University Press.
- Langton, Christopher G., ed. 1994. *Artificial Life III: Proceedings Volume XVII, Santa Fe Institute Studies in the Sciences of Complexity*. Reading, MA: Addison-Wesley.
- Lesser, Victor, ed. 1995. *ICMAS-95: First International Conference on Multi-Agent Systems*. Cambridge, MA: MIT Press.
- Lowe, E. J. 1993. "The Causal Autonomy of the Mental." *Mind* 102:629–44.
- Lukes, Steven. 1973. *Émile Durkheim: His Life and Work*. London: Penguin Press.
- . 1982. "Introduction." Pp. 1–27 in *The Rules of Sociological Method*. New York: Free Press.
- Margolis, Joseph. 1986. "Emergence." *Philosophical Forum* 17:271–95.
- Mayhew, Bruce H. 1980. "Structuralism versus Individualism, Part 1: Shadowboxing in the Dark." *Social Forces* 59:335–75.
- McLaughlin, Brian P. 1992. "The Rise and Fall of British Emergentism." Pp. 49–93 in *Emergence or Reduction? Essays on the Prospects of Nonreductive Physicalism*, edited by A. Beckermann, H. Flohr, and J. Kim. Berlin: Walter de Gruyter.
- Meyer, D. A. and T. A. Brown. 1998. "Statistical Mechanics of Voting." *Physical Review Letters* 81:1718–21.
- Némedi, Dénes. 1995. "Collective Consciousness, Morphology, and Collective Representations: Durkheim's Sociology of Knowledge, 1894–1900." *Sociological Perspectives* 38:41–56.
- Parsons, Talcott. [1937] 1949. *The Structure of Social Action*. New York: Free Press.
- Pickering, W. S. F. 1984. *Durkheim's Sociology of Religion*. Boston, MA: Routledge & Kegan Paul.
- Porpora, Douglas V. 1993. "Cultural Rules and Material Relations." *Sociological Theory* 11:212–29.
- Porter, Theodore M. 1995. "Statistical and Social Facts from Quetelet to Durkheim." *Sociological Perspectives* 38:15–26.
- Prietula, Michael J., Kathleen M. Carley, and Les Gasser, eds. 1998. *Simulating Organizations: Computational Models of Institutions and Groups*. Cambridge, MA: MIT Press.
- Rawls, Anne Warfield. 1996. "Durkheim's Epistemology: The Neglected Argument." *American Journal of Sociology* 102:430–82.
- Reynolds, Craig W. 1987. "Flocks, Herds, and Schools: A Distributed Behavioral Model." *Computer Graphics* 21:25–34.
- Rosenberg, Alex. 1997. "Reductionism Redux: Computing the Embryo." *Biology and Philosophy* 12:445–70.
- Sawyer, R. Keith. 1999. "The Emergence of Creativity." *Philosophical Psychology* 12:447–69.
- . Forthcoming. "Nonreductive Individualism: Supervenience, Wild Disjunction, and Social Causation." *Philosophy of the Social Sciences*.
- Schmaus, Warren. 1994. *Durkheim's Philosophy of Science and the Sociology of Knowledge*. Chicago, IL: University of Chicago Press.
- . 1999. "Functionalism and the Meaning of Social Facts." *Philosophy of Science* 66 (proceedings): S314–S323.
- Steels, Luc. 1997. "The Synthetic Modeling of Language Origins." *Evolution of Communication Journal* 1:1–34.
- Stone, Gregory P. and Harvey A. Farberman. 1967. "On the Edge of Rapprochement: Was Durkheim Moving toward the Perspective of Symbolic Interaction?" *Sociological Quarterly* 8:149–64.
- de Tarde, Gabriel. 1969. *On Communication and Social Influence: Selected Papers*. Chicago, IL: University of Chicago Press.
- Turner, Stephen P. 1986. *The Search for a Methodology of Social Science: Durkheim, Weber, and the Nineteenth-Century Problem of Cause, Probability, and Action*. Dordrecht: D. Reidel.
- . 1995. "Durkheim's *The Rules of Sociological Method*: Is It a Classic?" *Sociological Perspectives* 38:1–13.
- . 1996. "Durkheim among the Statisticians." *Journal of the History of the Behavioral Sciences* 32:354–78.
- Walker, Adam and Michael Wooldridge. 1995. "Understanding the Emergence of Conventions in Multi-Agent Systems." Pp. 384–89 in *ICMAS-95*, edited by V. Lesser. Cambridge: MIT Press.