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Nonreductive Individualism
Part I—Supervenience and Wild Disjunction

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The author draws on arguments from contemporary philosophy of mind to provide an argument for sociological collectivism. This argument for nonreductive individualism accepts that only individuals exist but rejects methodological individualism. In Part I, the author presents the argument for nonreductive individualism by working through the implications of supervenience, multiple realizability, and wild disjunction in some detail. In Part II, he extends the argument to provide a defense for social causal laws, and this account of social causation does not require any commitment to intentionality or agency on the part of individuals.

The tension between individualism and collectivism is central to contemporary sociological theory and practice. The debate occurs at two levels: an ontological level, concerning arguments about what entities and properties exist in the world, and a methodological or epistemological level, concerning the proper way to proceed in scientific practice. In this article, I draw on several decades of established argument in the philosophy of mind to explore and clarify these longstanding ontological and methodological issues in sociology.

Individualists, such as rational choice theorists and exchange theorists, make both ontological and methodological claims for their approach. Ontological individualism is the stance that only individuals exist; sociological objects and properties are nothing but combinations of the individual participants and their properties. Methodological individualism is an epistemological stance that argues that every event that sociology explains can be explained in terms of individuals, and every law in sociology can be explained by laws concerning individuals (Coleman 1990, 20; Hempel 1965, 258-64; Homans 1964). Early statements of methodological individualism by Popper, Hayek, and Watkins were soon criticized (e.g., Gellner [1956] 1968; Goldstein...
[1958] 1973; Mandelbaum 1955); contemporary methodological individualists have responded vigorously to these criticisms (e.g., Macdonald and Pettit 1981; Quinton 1975-76; Mellor 1982). Despite this long history, the debate remains confused and unresolved (cf. Bhargava 1992; Ruben 1985, 132). For example, upon examination, many of the arguments for methodological individualism seem in fact to be arguments for ontological individualism, yet one can accept ontological individualism and still reject methodological individualism. The logical error of making ontological arguments in support of methodological claims is quite common in the philosophy of social science and is found in Popper’s (1962) confusion of materialist metaphysics with epistemology (e.g., p. 341), in Elster’s (1985) methodologically individualist reading of Marx, and in Giddens’s (1984) attacks on structural sociology (e.g., chap. 4).

In opposition to individualism, contemporary collectivist paradigms in sociology include network theory, structural sociology, sociological realism, and neofunctionalism. Structuralists, for example, argue that social phenomena can be studied objectively and scientifically without a concern for individual-level properties (e.g., Blau 1970, 1977; Mayhew 1980). Like individualists, collectivists have not been clear about the degree to which their stance is ontological or methodological. As a result, several theorists have accused structuralists of hypostatizing or reifying sociological concepts (Collins 1981; Giddens 1984; King 1999). These critics claim that the structuralist method assumes that society is ontologically autonomous of individuals, when in fact it is nothing more than a descriptive convenience for sociologists (e.g., King 1999, 272). Are structural sociologists claiming that sociological terms and concepts are real, or are they making the weaker argument that sociologists need them for explanation? If the latter, then sociological terms and concepts would seem to be nothing more than descriptive conveniences, and they would seem to be epiphenomenal. If one makes only methodological claims for the usefulness of sociological terms and concepts, then those terms and concepts cannot have causal power. Yet many structuralists speak as if sociological phenomena can exert causal power over individuals. If collective phenomena can exert causal power, then they must be real, and the theorist must provide philosophical arguments to justify this sociological realism.

In fact, several contemporary sociological theorists who reject individualism have made realist arguments (e.g., Archer 1995; Bhaskar 1975, 1979; Keat and Urry 1975). The unresolved difficulty facing
sociological realists is the problem of a dualist ontology: if both social entities and individuals are real, then it seems that one has two distinct ontological orders. Without a more robust foundational account, an ontologically individualist sociology has no grounds for proposing social causal laws. Due to such difficulties, sociological realism is not widely held by contemporary philosophers of social science, and many prominent schools of sociological theory—including methodological individualism, subjectivism, and interpretivism—are antirealist concerning the social.

In this two-part article, I draw on contemporary philosophy of mind to provide a novel integration of the individualist and collectivist positions. In Part I, I draw on philosophical discussions of supervenience, multiple realizability, and wild disjunction to provide a philosophical argument to ground collectivist macrosociology, one that grants to individualists their primary ontological concerns yet holds that sociology may of necessity be irreducible to laws and terms concerning individuals. I refer to this position as nonreductive individualism (NRI) by analogy with the consensus position in philosophy of mind, nonreductive materialism.3 Nonreductive materialism developed over the past thirty years as a theory concerning the mind-brain relation. As a result of debates beginning in the 1960s and continuing through the 1990s, arguments for nonreductive materialism largely convinced philosophers of mind to reject eliminative materialism, the physicalist stance that higher-level discourse is incorrect and unnecessary and should be replaced with the lower-level discourse. Nonreductive materialism holds to ontological materialism, the belief that all that exists is matter, thus rejecting various forms of Cartesian dualism and vitalism. However, nonreductive materialism argues that mental properties and states are irreducible to physical properties and states and that the science of the mind is autonomous from the science of neurons.

Although these arguments have focused on the mind-brain relation, many philosophers believe that they can be generalized to apply to any hierarchically ordered sets of properties (Fodor 1989; Humphreys 1997, 3; Jackson and Pettit 1992, 107; Kincaid 1997, 76; Yablo 1992, 247, n. 5). Yet the implications of these well-established arguments have not yet been fully developed by sociological theorists. The concepts of supervenience and multiple realizability have been discussed by some philosophers of social science (Currie 1984; Kincaid 1997; Mellor 1982; MacDonald and Pettit 1981; Pettit 1993), although their influence in sociological theory has been limited. The
wild disjunction argument has not been fully explored by these philosophers, and its sociological implications have not been elaborated. Consequently, in Part I, I elaborate this argument in some detail.4

In Part II, I extend NRI to provide an account of why social causation may necessarily be a part of sociological explanation. A commonly noted problem with ontological individualism is that it seems to result in sociological phenomena that are epiphenomenal, or causally inert. Many philosophers of social science who reject methodological individualism nonetheless agree that the social has no causal power. Prior realist and collectivist accounts have left this issue unresolved. In Part II, I draw on arguments for mental causation from the philosophy of mind to make an argument for social causation that is consistent with ontological individualism, and I conclude that sociologists are justified in forming laws that describe how individuals are affected by social causes and that such laws may be irreducible to the intentions, perceptions, goals, or actions of individuals.

LEVELS OF ANALYSIS

Nonreductive materialism draws on a long philosophical tradition of conceiving of the world in terms of levels of analysis, as a stratified structure of “levels” or “orders” of entities and their characteristic properties. Higher-level entities are composed of entities belonging to the lower levels; the entities at each level are characterized by a set of properties distinctive to that level (Kim 1993, 337; Wimsatt 1976). Most nonreductive materialists consider these to be not merely layers of discourse about objects and their properties but layers that in some sense actually exist in the world.

A similar conception of levels of analysis has been central to sociological theory at least since Comte proposed his hierarchy of the sciences; the levels notion began to receive focused attention in the late 1980s in connection with theories of the micro-macro link, conceived of as the relation between individual and collective entities and properties (Alexander et al. 1987; Archer 1995; Ritzer 1991). Many of these contemporary theorists hold that social phenomena emerge out of interaction between individuals (Edel 1959; Ritzer 1991; Wagner 1964; Wiley 1988), and in some contemporary sociological theories, these emergent social entities and properties are claimed to exert causal force over those constituting individuals (e.g., Archer 1995; see Sawyer 2001).
Physicalist reductionists accept that there may be some practical use to levels of analysis as realms of scientific discourse but hold that these levels do not actually exist in the world. If all objects are physical, then how can so-called higher-level properties of entities and events be anything more than physical properties? And more critically, how can these higher-level properties or entities have causal powers, above and beyond the causal powers of physical matter? This is the crux of the contemporary debate between identity theorists and nonreductive materialists in the philosophy of mind. In the following, I draw on well-established arguments in the philosophy of mind to argue for a form of property dualism, which holds that social properties may be irreducible to individual properties, even though social entities consist of nothing more than individuals.

TYPE AND TOKEN IDENTITY

The mind-brain identity thesis holds that the mental is identical with the physical (one canonical statement is Smart 1959). In response, nonreductive philosophers of mind partially accepted this claim but counterproposed a distinction between type identity and token identity. The nonreductionists pointed out that the initial statement of the identity thesis was actually a claim for “type identity”: all mental types, or properties, are identical to physical properties, or more generally all properties are identical to physical properties. Nonreductionists reject type identity but accept token identity, and likewise, NRI accepts token identity:

**Token identity:** There is only one kind of event in the universe, regardless of the terms, concepts, or laws used to describe those events. Events are unrepeatable, dated, countable particulars, or tokens. However, a single event may be referred to under multiple descriptions (following Davidson, 1970).

This thesis presupposes an ontology in which it is objects that have properties, and it is properties that carry causal powers; however, it is events that are the relata of causal transactions. I take an event to be the instantiation of properties by an object at a time. Critically, token identity does not entail type identity of events. A type of event is a class or kind of event that has instances, and we understand an event as a type relative to a taxonomy. Individual token events can be
instances of multiple types; the event type “a group eating in a restaurant” may be instantiated in a token event that also instantiates the event type “a meeting of a reading club.” Even though these types may be instantiated in the same token, the types are not identical; a group eating in a restaurant is not always a meeting of a reading club. In addition to token events that instantiate multiple social event types, a single event token can instantiate both social event types and individual event types; the event token that instantiates the social type “a meeting of a reading club” may also instantiate individual event types such as “each of the individuals present satisfies hunger by eating” and “some of the individuals present are hoping to make new friends.”

Thus, a single event or entity can have both social and individual properties. The collective entity that has the social property “being a church” may also have a collection of individual properties associated with each of its component members, for example, each individual $I_n$ may hold properties “believing in $X_n$” or “intending $Y_n$,” where the sum total of such beliefs and intentions are (in some sense) constitutive of the social property “being a church.”

In the following, I draw on arguments from the philosophy of mind to argue that the relation between social events and individual events is one of token identity but not of type identity. Type identity of events would lead to the reductionism of methodological individualism, in the same way that mind-brain type identity leads to physicalist reductionism. However, token identity without type identity is problematic for methodological individualism. Essentially, I argue that if social types or properties are multiply realized in wildly disjunctive sets of individual properties, methodological individualism cannot be maintained.

**SUPERVENIENCE**

Nonreductive materialists argue against type identity using arguments of supervenience and multiple realization. Although these have largely proceeded as two distinct traditions of discourse, most philosophers agree that these two arguments are compatible (e.g., Heil 1999; Horgan 1981, 405-9; Kim 1984, 262; Lowe 1993, 630; Sarkar 1992). The claim that mental states are physically realized entails the claim that they are physically supervenient. Many nonreductive materialists
use elements of both supervenience and multiple realization arguments (Kim 1993, 194-95).

Davidson (1970) noted that token identity entailed supervenience:

\textit{Supervenience:} If two events are identical with respect to their descriptions at the lower level, then they cannot differ at the higher level. If a collection \( L \) of lower-level components with a given set of relations causes higher-level property \( H \) to emerge at time \( t \), then on every other occasion when \( L \) obtains, \( H \) will again obtain.

The social version of supervenience states that if a collection of individual properties with a given set of relations causes a certain social property to obtain on one occasion, then that same collection of individual properties in that same set of relations on another occasion will cause the same social property to obtain. Supervenience is commonly defined in terms of \textit{indiscernability}: higher-level properties supervene on lower-level properties when any two things indiscernible in lower-level properties are indiscernible in higher-level properties (Kim 1997, 188). Note that this implies that an event’s properties cannot change at a higher level without also changing at the lower levels. Also note that supervenience is an asymmetric relation between levels; a given social property can conceivably supervene on multiple, different collections of individual properties on different occasions, but the inverse is not the case: A given collection of individual properties will realize the same social property on all occasions.\(^9\)

Davidson’s (1970) paper has been extremely influential, and today most philosophers of mind accept that the mind is supervenient on the brain, reject type identity, and accept property dualism. Property dualists argue that “hard” or “liquid” exist as properties of objects like rocks or water, even though they are not properties of the individual atoms composing the object; likewise, property dualists regarding the mental argue that mental properties exist as properties of the brain. A single token brain event can have both mental and physical properties, in the same way that an ocean current can have both fluid-flow properties and molecular properties.

In the same way that an ontological materialist must accept token identity and supervenience regarding the mental-physical relation (cf. Kim 1997; Papineau 1993), an ontological individualist must accept the analogous theses regarding the social-individual relation. To reject either necessarily results in problematic ontological dualisms. For example, to reject token identity, one must maintain
that there are two distinct classes of event, social and individual, which could then participate in causal relations with each other. To reject supervenience is to accept ontological dualism and opens one to the criticism of hypostatizing the social group as an entity. This is why the most prominent contemporary sociological realists, Bhaskar (1979) and Archer (1995), implicitly accept both token identity and supervenience (Sawyer 2001).

A few philosophers of social science have suggested that the individual-collective relation is one of supervenience, but these have been cursory treatments and have not addressed the most recent philosophical discussions concerning supervenience. Currie (1984, 357) argued that supervenience provides an argument for the ontological independence of the social, and thus his argument is effectively countered by more recent philosophical commentaries on supervenience, which note that supervenience does not solve any ontological problems and that it is compatible with both reductionist and nonreductionist positions (Heil 1998, 1999; Kim 1997; Lennon and Charles 1992). Kincaid (1997) did not make explicit that the supervenience argument refers to properties rather than to entities such as objects or events; thus, the relation of his argument to NRI is not clear. Mellor (1982, 16) accepted supervenience but argued that it entails reducibility. MacDonald and Pettit (1981, 119-20, 144-45) noted the supervenience argument in passing but claimed that it does not entail nonreductionism and is compatible with methodological individualism. Pettit (1993, 148-54) argued that both the social and the intentional are supervenient on the physical, that social regularities supervene on individual intentional regularities, and that this constituted an argument against collectivism. These claims are similar to more recent reductionist criticisms of supervenience that I review below; these philosophers of mind have argued that token identity and supervenience entail physicalism. By drawing on the responses to these criticisms, I show by analogy that token identity and supervenience do not entail methodological individualism.

MULTIPLE REALIZABILITY AND WILD DISJUNCTION

Supervenience is consistent with ontological individualism and is noncommittal with respect to the reductionist stance of methodological individualism (Heil 1998, 1999). If supervenience is to be used to ground a nonreductive stance, one must develop a version of the
supervenience thesis that argues that the reductionist approach of methodological individualism is not possible for some social properties, despite ontological individualism. I will argue that to reject methodological individualism, one must show how type identity versions of supervenience might not obtain. The argument that convinced most philosophers of mind that the mental could not be reduced to the physical was Putnam and Fodor’s multiple realizability argument (Fodor 1974; Putnam 1967); nonreduction due to multiple realizability is now the consensus position in the philosophy of mind (Block 1997; Heil 1999). The argument that mental properties are multiply realizable led to the demise of type identity and of eliminative materialism. An acceptance of a parallel argument in sociology would show how one could reject methodological individualism.

Putnam’s general idea was inspired by the rapid development of computers and the new field of artificial intelligence. Putnam reasoned that if mental states could be grounded, or “realized,” in both carbon-based human brains and in silicon-based digital computers, then those mental states could not be identified with either realization of them. To use the canonical example, being in pain is a mental property that is multiply realizable. Your being in pain depends on and is determined by a particular neurological property, a fish’s being in pain depends on and is determined by a very different neurological property, and if a computer were ever developed that could feel pain, that pain would be determined by a silicon-based property.

Social properties are multiply realizable at the individual level (cf. Kincaid 1997, 17-20). For example, the property of “being a church” can be realized by a wide range of organizational structures, cultural practices, and individual beliefs and dispositions. The same is true of properties such as “being a family,” “being an organization,” and “being an institution.” Microsocial properties are no less multiply realizable: examples include “being an argument,” “being a conversation,” and “being an act of discrimination.”

Putnam argued that mental states, types, or kinds are functional types rather than physical types. A mental state like “pain” is defined by its functional properties and thus is a functional type; this functional type can be “realized” (or “implemented” or “executed”) by a widely varying range of physical material: a human mind, an octopus mind, or an intelligent robot. Thus, Putnam grounded multiple realizability in functionalism by giving mental properties functional definitions rather than reductive definitions in terms of their realizing.
physical properties. A functionalist holds that what defines a system component are functional properties that are specified in terms of their causal role in relating inputs to outputs, rather than their physical realizations.

Although often mentioned in the same breath, multiple realizability is not identical to functionalism, and multiple realizability does not depend on functionalism. Multiple realization is a descriptive claim about the nature of the organization of the objective world; functionalism is an explanatory account of how that state of affairs came to be. My account in the following is independent of functionalist claims. For example, Horgan extended the multiple realizability concept beyond the usual argument that functional mental states like “pain” are multiply realized, in virtue of having different physical realizations in different species (Horgan 1997). This original claim of Putnam’s is fairly easy for a reductionist to handle because he can respond by proposing a species-specific reduction; this was Kim’s response in 1989. Horgan’s stronger claim is that a mental state could be multiply realized within creatures of the same species (my brain’s realization of my pain may not be the same as your brain’s realization of your pain). An even stronger claim is that a mental state could be multiply realized within a single organism (my brain’s realization of pain at time \( t_1 \) may not be the same as my brain’s realization of pain at time \( t_2 \)).

The following account of wild disjunction is an account of how this may be. The basic idea is that for any social property, there is in principle an endless sequence of nomologically possible individual-level states such that although each of them “realize” or “implement” the social property, none of them is coextensive with it. In connection with his supervenience argument, Davidson (1970) first noted the implications of wild disjunction for nonreductive materialism. Davidson explained that philosophers of mind in the 1960s rejected definitional behaviorism not simply because its theories failed but rather because there was a pattern to the failures. Reducing a mental event to a purely behavioral description did not work because a simple description of a mental event required a complex, long, proviso-laden, disjunctive description in behavioral language. Thus, psychologists rejected behaviorism because they realized that there were probably no nomological connections between the mental and observed behaviors. Consequently, Davidson accepted token identity and supervenience but denied that they entail reducibility through
law or definition. This claim is based on his notion of a law: laws refer to event types, defined in terms of physical or mental properties; although a mental event could be picked out using the physical vocabulary alone, there is no purely physical property, no matter how complex, that has the same extension as a mental property. The physical equivalent of a mental property might be a long and uninstructive disjunction; thus, the mental is nomologically irreducible—there may be relations between the mental and the physical, but they are not lawlike (Davidson 1970, 88-92).

In the following, I draw on Fodor’s (1974, 1997) elaboration of the wild disjunction argument to show why methodological individualist arguments for type identity are unsuccessful, thus showing that social properties may not be reducible to individual properties. Fodor provided an account of how it is that all of the special sciences have identified macro-level regularities that are realized by mechanisms whose physical substance is typically quite heterogeneous and unimaginably complicated. All of the special sciences—not only sociology and psychology, but also physical sciences such as chemistry and biology—seem to indicate that complex combinations of heterogeneous micro-level components somehow converge on stable macro-level properties.

Let

\[ S_1x \rightarrow S_2x \]  

be a law of sociology. (1) is intended to be read “all \( S_1 \) situations bring about \( S_2 \) situations.” A classic example is Blau’s (1970) statement of Durkheim’s ([1893] 1984) law about social differentiation: as the size of a collective increases, the degree of differentiation within the collective will increase. Even some methodological individualists such as Popper accept the existence of social laws; Popper (1957) provided several examples of sociological laws, such as “you cannot have full employment without inflation” and “you cannot introduce a political reform without strengthening the opposing forces, to a degree roughly in ratio to the scope of the reform” (p. 62). A necessary and sufficient condition of the reduction of Equation 1 to a law about individuals is that the formulae (2) and (3) be laws, and a necessary and sufficient condition for methodological individualism to obtain is that all of sociology’s laws be so reducible:
$S_1x \leftrightarrow I_1x$  

(2a)

$S_2x \leftrightarrow I_2x$  

(2b)

$I_1x \rightarrow I_2x$.  

(3)

$I_1$ and $I_2$ are descriptions of groups in terms of the properties of the component individuals and their relations (see note 7), and (3) is a law relating these collections of properties and relations. Formulae like (2) are called *bridge laws*. Bridge laws contain properties of both the reduced and the reducing science. Note that the double arrow in the bridge laws (2) are not causal arrows because causation is asymmetric whereas bridge laws must be symmetric. The arrows in bridge laws are identity relations. If type identity of the social and the individual holds, then the relations in (2) are lawful relations of property identity.

Every science has a taxonomy of events in its universe of discourse and a descriptive vocabulary of theoretical and observation properties such that events fall under the laws of the science by virtue of satisfying those properties. Obviously, not every true description of an event is a description in a science’s vocabulary of properties. For example, there may be many sociological events that have the property “a church founded in the month of August hires a janitor.” However, there is no science that contains “a church founded in the month of August hires a janitor” as part of its descriptive vocabulary. Likewise, there is no sociological law that applies to events in virtue of their being instantiations of the property “a church founded in the month of August hires a janitor.” In Fodor’s terms, this property is not a *natural kind*, and predicates that express that property are not natural kind predicates. A natural kind is something that exists in the world, and membership in a natural kind is determined by the causal structure of the world (Boyd 1991; Hacking 1991). In the following, I will use the term “natural kind” to refer to both natural kinds and social kinds, to make clear the analogies with the original argument in the philosophy of mind.  

If methodological individualism is true, then every sociological natural kind is, or is coextensive with, an individual natural kind (as claimed by Macdonald and Pettit 1981). Every sociological natural kind is an individual natural kind if bridge laws express property
identities, and every sociological natural kind is coextensive with an individual natural kind if bridge laws express event identities. This follows from our above characterization of methodological individualism: that every property that appears in a law of sociology must appear as one of the reduced properties in some bridge law. If a law about individuals is related to a sociological law in the way that (3) is related to (1), then every natural kind predicate of sociology is related to a natural kind predicate of individuals in the way that (2) relates \( S_1 \) and \( S_2 \) to \( I_1 \) and \( I_2 \).

I will argue that this consequence of methodological individualism cannot be maintained, drawing on Fodor’s wild disjunction argument. If the right-hand sides of the bridge laws (2) are wildly disjunctive, then one can accept token identity and supervenience and yet reject methodological individualism.

Sociological natural kind terms such as “church” or “competitive team sport” may involve the disjunction of a large number of otherwise unrelated collections of individual-level properties. “Competitive team sport” is a group-level natural kind term. The regularities observed on the field can be described at a structural level in terms of the positions, patterns, and rules of the game. Token event identity holds; using only individual natural kind terms, the individual-level description of a single token event within, for example, a single token football game might be possible. These properties would include the differing motives for playing; the attitudes about fellow players; the beliefs about the potential outcomes of the game; the unique, potentially idiosyncratic individual calculations of present utility and of future trust and obligations; and each individual’s internal representations of the football game and his role within it.

But successful translations of token events into individual terms is not sufficient to ground methodological individualism; it claims not only that a given token event’s social description can be reduced but that social event types can be reduced. For example, it claims that one can develop an individual-level description of the natural kind term “competitive team sport” such that all possible tokens of this sociological type can be described in individual terms. A reduction of the group-level natural kind term “competitive team sport” to natural kind terms of individuals would involve the disjunction of all past and potential players’ individual properties, in every past and potential competitive team sport, in all of the world’s cultures. For these reasons, an individual-level description of the social-level natural kind term “competitive team sport” is likely to be wildly disjunctive.
Likewise, “being a church” could be realized in disjunctive ways in different cultures and social groups. Nonetheless, “being a church” could participate in social laws such as “if a group has the property of being a church, then its degree of solidarity will be higher than groups that do not have this property.” This social law is designed to be applicable to all social groups holding the property, regardless of that property’s realization in any given society or culture.

If individual-level realizations of sociological properties are wildly disjunctive—and there is much empirical evidence that suggests that they are—then for methodological individualism to be maintained, we have to allow wildly disjunctive right-hand sides of bridge laws:

\[ S_x \leftrightarrow I_1^x \text{ or } I_2^x \text{ or } I_3^x \text{ or } \ldots \text{ or } I_n^x, \]  

where \( S \) is a natural kind term of sociology and \( I_n \) are natural kind terms of individuals, each corresponding to the properties of all component individuals and their relations for one realization of \( S_x \) (see note 7). In (4), the right-hand side is a disjunction of many natural kind predicates of individuals, but the disjunction is not, itself, a natural kind predicate of individuals.

For cases of reduction in which the bridging relation is like (4), then what corresponds to (3) above—the social law as reduced to individual terms—will not be a law, because the properties appearing in the antecedent and the consequent will not be natural kind predicates. Instead, we will have something like (5):

\[
\text{Law of sociology:} \quad S_x \rightarrow S_x
\]

Law of sociology: \[ S_x \rightarrow S_x \]  

Disjunctive properties: \[ I_1^x \text{ or } I_2^x \text{ or } I_3^x \text{ or } \ldots \text{ or } I_n^x \rightarrow I_1^x \text{ or } I_2^x \text{ or } I_3^x \text{ or } \ldots \text{ or } I_n^x \]  

of individual event types.

Thus, if wild disjunction is empirically correct, then statements such as (5) are the individualist reductions of the laws of sociology:

\[ I_1^x \text{ or } I_2^x \text{ or } I_3^x \text{ or } \ldots \text{ or } I_n^x \rightarrow I_1^x \text{ or } I_2^x \text{ or } I_3^x \text{ or } \ldots \text{ or } I_n^x. \]
In Watkins’s (1957) classic phrase, (5) is a “rock bottom” explanation of the social law identified in (1). Methodological individualism can be maintained only by accepting that such laws are the proper business of sociology. Even if we accept that relations such as (5) are the ultimate laws of sociology, we are still left with a rather weak version of methodological individualism; the usual account of methodological individualism holds that natural kind terms of sociology can be nomically translated into natural kind terms of individuals.

Of course, an immortal and all-knowing sociologist might find a combination of properties about individual event types that was, in brute fact, coextensive with the sociological description “a church” or “a competitive team sport.” Because we accept ontological individualism—a football game, after all, contains only the people that are playing it—and token identity—each event described by the sociological property “competitive team sport” is identical to an event described by the properties of the constituent individuals—then there must be such a disjunction. But due to wild disjunction, nothing but brute enumeration could convince us of the accuracy of any proposed disjunction.

If methodological individualism is true, then for every sociological natural kind predicate there is a coextensive set of individual natural kind predicates, and the generalization that states this coextension is a law. If wild disjunction holds, then the individual-level disjunction is not a natural kind term, and thus the relations in (5) are not what most scientists mean by laws. If we allow relations such as (5) to be the laws of sociology, there are major epistemological consequences. We no longer know what a law of sociology should look like, and we no longer know what a type or predicate of sociology should look like. This would make it very difficult to do any sociology at all, even sociology that is methodologically individualist.

All methodologically individualist social science theories—agent-based computational modeling, rational choice theory, game theory—are institutionalized gambles that such lawful coextensions can be found. However, there are good grounds for hedging these bets. There are no firm data for any but the grossest and most approximate correspondences between sociological types and individual types. There is an open empirical possibility that what corresponds to the natural kind predicates of sociology may be a heterogeneous and unsystematic disjunction of predicates in individualist language. If
so, sociology would not be reducible to individualism in the sense of reduction involved in claims of methodological individualists. If the relation is characterized by wild disjunction, then the attempt to pair sociological structures with individual-level phenomena may be forbiddingly difficult.

Why does macrosociology exist at all? The methodological individualist’s answer is entirely epistemological: if only societies were not so complex, if only individuals’ motives and mental states were not so hard to determine en masse, if only human communication were not so difficult to understand, then we could study individuals instead of macro phenomena (e.g., Elster 1985, 5-6). Wild disjunction provides an explanation that goes beyond this epistemological claim. Sociology does not exist only because the individual-level decomposition is simply too difficult to fully describe and explain; this would be the case only if the wild disjunction at the lower level had lawful correspondences to the higher-level natural kinds. But if the disjunctive lower-level terms are not lawfully related, then the existence of higher-level science depends not on our epistemological weaknesses but on the way the world is put together: not all natural kind terms of the higher-level science correspond to natural kind terms of the lower-level science (cf. Fodor 1974, 131). Consequently, Fodor described himself as a realist concerning mental properties.

These arguments have been influential and continue to be widely debated in philosophy of mind. Critics of multiple realizability include Sober (1999), who argued for the causal completeness of physics but accepted that there is a place for higher-level explanations, and Millikan (1999), who provided a technical criticism of Fodor’s concept of the natural kind. Whether nonreductive materialism warrants mental realism is still unresolved (Heil 1998; Kim 1989, 1997; Lennon and Charles 1992, 14-18; see Part II). Several critics have noted that multiple realizability and wild disjunction do not entail property dualism and thus do not justify mental realism. Kim (1992), Bealer (1994), and Horgan (1981) argued that just because the lower-level description is wildly disjunctive does not, in itself, explain why the lower-level description cannot be a property; the higher-level property could be identical to the disjunctive property formed by the many realizations at the lower level, and this disjunctive property could be part of a law. Kim argued that such a wildly disjunctive property must be a natural kind, or else we have to deny that higher-level terms and concepts pick out properties and kinds in the world and thus we must reject higher-level realism. Fodor (1997) and Block
(1997) more recently responded with defenses of multiple realizability.

The wild disjunction argument has not been applied to sociological theory. Philosophers of social science have occasionally invoked multiple realizability to argue against methodological individualism but without elaborating the implications of wild disjunction (e.g., Currie 1984, 353); as Bhargava (1992, 67) noted, supervenience and multiple realization alone are not sufficient to counter methodological individualism. Ruben (1985, 94-127) rejected the wild disjunction argument against physicalism in the philosophy of mind but then proposed a nonanalogous “alternative realization” argument against individualism that draws on a theory of intentional states. Jackson and Pettit (1992, 103) rejected the multiple realizability claim but without engaging in the above arguments. Kincaid (1997) used multiple realization arguments to argue against methodological individualism; but without the wild disjunction argument, his presentation does not make as strong an argument against individualism. Papineau (1985) denied the applicability of functionalist arguments from philosophy of mind to sociological theory, basing his critique on a notion that multiple realizability arises from selection pressures. But his argument assumed that the only version of multiple realization is a functionalism based on selection pressure arguments (cf. Papineau 1993, 47, n. 9); yet that is not central to the above account. Macdonald and Pettit (1981, 145-47) rejected collectivism by arguing that the different realizations at the individual level are actually instantiations of the same property. They rejected the possibility that there could be a lawful regularity at the social level that would not correspond to a lawful regularity at the individual level; they claimed that any institutional predicates used in the formulation of nomic regularities must be predicates that reduce to individual counterparts. This argument is analogous to Kim’s (e.g., 1992) critique of Fodor, in arguing for type identity of social and individual properties.

CONCLUSION

To summarize Part I, I have defined NRI as an acceptance of token identity and supervenience, combined with the wild disjunction argument that this ontological position does not entail the reductivist program in sociology. Even if token sociological events are identical to token individual events and social properties supervene on individ-
ual properties, it does not follow that the natural kind predicates of sociology are coextensive with the natural kind predicates of individualism. Thus, ontological individualism does not guarantee that properties of individuals provide a sufficient vocabulary for sociological theory. In the same way that nonreductive materialism is compatible with the ontological assumptions of materialism—matter is the only substance that exists in the universe—NRI is compatible with the ontological assumptions of individualism—social groups are composed of nothing other than individuals. And like nonreductive materialism, NRI nonetheless argues that sociologists have valid philosophical grounds for developing laws and theories concerning collective phenomena that may not be reducible to laws and theories concerning individuals.

NRI supports collectivism by demonstrating how sociological laws, properties, and types may be irreducible to individual laws, properties, and types. The extent to which wild disjunction holds for any given sociological property is an empirical question that must be resolved through empirical study (cf. Fodor 1974; Kincaid 1997, 13-30). But if it does hold, NRI suggests that collectivism may be a necessary scientific stance because of the structure of the world, not only because of our own epistemological limitations. NRI would then lead to a special type of sociological realism with respect to those properties, a realism that is consistent with ontological individualism.

Fodor and others have used these arguments to argue that mental properties are real, but this remains one of the more controversial elements of the argument. One of the reasons that these arguments are still current in the philosophy of mind is that their resolution is directly relevant to the question of mental causation. The exact nature of one’s version of supervenience determines one’s attitude toward the possibility of irreducible higher-level causal laws. The import of antirealist criticisms of property dualism is that higher-level properties are causally inert. If so, we still have no account of how mental or social properties could participate in causal laws. In Part II, I extend NRI to provide an account of social causation.

NOTES

1. The first person to distinguish these claims was Goldstein ([1958] 1973); the distinction has been elaborated by Quinton (1975-76) and Lukes (1977).

3. This is also called nonreductive physicalism. This consensus has been explicitly noted by several philosophers, including Block (1997, 107) and Heil (1999, 189). The current consensus position in the philosophy of biology is similarly antireductionist and has been called physicalist antireductionism (Rosenberg 1997). Here I restrict my arguments to the philosophy of mind, but the issues are quite similar in both cases.

4. To avoid unwieldy qualifying constructions, I occasionally replace the original terms “mental/physical” used in these sources with either “social/individual” or “higher level/lower level,” while continuing to attribute these modified arguments to the originating philosopher of mind.

5. I am being pretty free with the relation between states, properties, concepts, types, and predicates (cf. Fodor 1974), and I will refer to all of these as types or properties. Many philosophers draw distinctions, for example, the distinction between properties and concepts in Putnam (1967) or the definition of types as clusters of properties in Aronson, Harré, and Way (1995). The argument holds in any case.

6. My concept of event combines elements of Davidson’s (1970) and Kim’s (1975) and thus could be termed a particularistic theory with a commitment to properties (cf. Brand 1975, 134, 141, n. 16).

7. By “individual event type,” I refer to the combination of all properties relevant to all individuals composing the social group, including but not limited to mental states, intentions, behavioral dispositions, and physical actions. This is analogous to the contrast “mental event/physical event” in the philosophy of mind, where “physical event” refers to the sum total of all neuronal properties and activities within a single brain.

8. I define “individual properties” to be properties about the observable behavior of individuals and of their inner mental states, even when the content of those inner states is a social concept or referent. The fact that the content of the individual’s belief may be social is somewhat problematic for methodological individualists (as claimed by Mandelbaum 1955 and Goldstein [1958] 1973); however, most contemporary methodological individualists accept these sorts of mental states and do not believe they necessarily imply the nonreducibility of the social (Elster 1985; Macdonald and Pettit 1981; Mellor 1982; Quinton 1975-76).

9. There are many forms of supervenience in the literature. For purposes of this argument, I accept the assumption that the relation of individuals and groups is a part-whole relation; thus, my argument is for mereological supervenience (Kim 1984, 264-65). The most commonly noted varieties of mereological supervenience have been referred to as weak and strong supervenience, yet there are also nonmodal, regional, and global supervenience (Heil 1998, 154, n. 8). The version that I present here is strong supervenience; this is the one that is least objectionable to the reductionist and the one that must be used when the concerns are ontological (Heil 1998, 151). Some philosophers of social science have rejected the assumption that groups are composed of individuals (James 1984; Ruben 1985); by accepting mereological supervenience, I grant more to the individualist and thus hope to make a stronger nonreductionist argument. Another rejection of the claim that the mind-brain relation is one of mereological supervenience is externalism, the position that mental properties are supervenient not only on neural properties but also on external properties of the physical world. The same may be true of social properties; this type of claim is characteristic of sociological theories that contain elements of materialism.
10. In fact, as Kim (1997, 189) pointed out, epiphenomenalism itself is committed to supervenience. A surprisingly common philosophical error, in both philosophy of mind and philosophy of social science, has been to talk as if supervenience alone entails irreducibility (e.g., Levine, Sober, and Wright 1987, 75-84). Bhargava’s (1992, 62-68, 78) discussion of social supervenience drew primarily on such earlier accounts, and he rightly rejected this version of supervenience argument.

11. The multiple realizability argument is also found in the philosophy of biology (Wimsatt 1976; Hull 1972, 496-97; 1973). Hull (1974) made the influential argument that many-many relations between levels result in a situation in which reduction of Mendelian genetics to molecular genetics is prohibitively complex.

12. Some philosophers of social science consider multiple realizability arguments to be forms of functionalist explanation that require a selection account (e.g., Kincaid 1997; Papineau 1985, 1993). This has led Papineau, for example, to reject multiple realizability arguments as part of a rejection of sociological functionalism (1985).

13. The “all” must be qualified: such laws are not exceptionless. I discuss such laws in Part II.

14. Following Boyd (1991), I treat social kinds on the model of natural kinds, although this is controversial (Hacking 1991; Millikan 1999). I believe that the following argument holds regardless of whether social kinds are identical in all respects to natural kinds; the argument holds if membership in a social kind is determined by the causal structure of the world (see Part II of this article).

REFERENCES


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