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R. Keith Sawyer¹

Abstract

Jens Greve has accurately summarized nonreductive individualism (NRI) and has made an important contribution to an ongoing discussion concerning individualism, reductionism, and emergentism. Greve's primary criticism is of my account of downward causation, and he cites Kim's critique of Fodor by analogy. I argue that my original paper already addressed Kim's critique, by drawing on other philosophers of mind that Greve does not engage with, to make an argument for downward causation based on wild disjunction. Further, I argue that Greve does not successfully make the case that the issue of the autonomy of the mental level is distinct from the autonomy of the social level. As empirical examples of irreducible emergent group properties, I cite studies of improvisational theater dialogues, and studies of social networks.

Keywords

Methodological Individualism, Emergence, Downward Causation, Nonreductive Individualism

I proposed nonreductive individualism (NRI)(Sawyer 2002, 2003d) as a framework to help clarify various incompatible accounts of emergence in sociology and philosophy. Jens Greve has done an admirable job of summarizing the NRI framework. As Greve correctly states, the NRI framework includes arguments for three propositions:

- (1) *Supervenience*. Social properties and laws are realized in individuals.
- (2) *Irreducibility*. They are nevertheless irreducible to individual properties and laws.

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- (3) *Social causation*. There may be causal laws in which social properties at one time result lawfully in individual properties at a later time, such that this lawful relation cannot be reduced to an individual law.

Greve accepts proposition (1), so it is not at issue here. And as Greve points out, I am not the first sociological theorist to argue for propositions (2) and (3). However, I argue that most of the existing arguments, made by historical and by contemporary sociologists, are flawed (Sawyer 2005). The framework of nonreductive individualism (NRI) grants more to the individualists than most sociological realists and critical realists do, and concludes that the predominant realist and holist arguments for propositions (2) and (3) do not hold water.

Many sociologists consider emergentist theorists to be unavoidably methodologically individualist—because they work upward from individuals to derive explanations of social phenomena. Greve also takes the classic stance of the methodological individualist, maintaining that once the ontological primacy of individuals is granted (Proposition 1), then an autonomous realm of social properties (Propositions 2 and 3) cannot be defended. This reductionist form of emergence has long been central in microeconomics and in methodological individualism in sociology (e.g., Coleman[1990]), and the emergentist theories of social mechanists are equally individualist (e.g., Hedström[2005]). In developing NRI, my goal was to acknowledge what I believe are the valid arguments presented by mechanists and individualists; and yet, even after granting them their core theoretical assumptions, I argue that there might be irreducible social properties with autonomous causal powers.

Greve's paper is a contribution to this important ongoing discussion in sociology and philosophy. Greve makes a good point when he argues that my extension of Fodor to downward causation is problematic (pp. 15-16), because it is true that Fodor himself did not make that extension. In making this extension, I drew on other philosophers of mind that Greve does not engage with (Horgan 1989, 1993, 1994; Sober 1999; Yablo 1992). These other philosophers present accounts of downward causation that are compatible with Fodor's argument, as follows. Fodor argued that higher-level laws may exist that cannot be lawfully reduced to lower-level laws. This would extend to downward causation if the antecedent social properties are wildly disjunctively realized, yet the consequent social properties are always realized in the same individual state. I agree that this argument warrants further attention, among both philosophers of mind and philosophers of the social sciences, and I applaud Greve for drawing attention to this important and unresolved issue.

I have two rejoinders to Greve's argument.

First, Greve presents his article as an analogous version of Kim's critique of Fodor (pp. 7-10). However, I addressed and cited all of the Kim articles that Greve uses in my previous publications on NRI (Sawyer 2002, 2003d).

The issues are more subtle than Greve acknowledges; after all, Fodor never did accept that Kim's argument demonstrated that his position in the philosophy of mind was incorrect (e.g., Fodor[1997]). For example, Greve does not fully address the implications of wild disjunction; if a social property is wildly disjunctively realized, then Kim's claim that any causal power apparent in a higher-level property is actually in the lower level, does not hold for type relations (p. 10). I accept (as does Fodor) that Kim's argument holds for any token instance; any token instance of a social property can be reduced to its realizing individual supervenience base. Greve does not address the core of Fodor's and my argument, which is directed at type relations, and thus one of lawful relations across many instances.

Second, Greve's argument that the autonomy of the mental is not analogous to the autonomy of the social is not successful. He says that the mental level is autonomous because "we do not have to be aware of the physical details of the mental processes" (p. 3). I agree. The question is, do we need to be aware of the individual details of group phenomena to explain them? Of course not. Even a very simple example can demonstrate this. In almost all species, sex ratios are maintained at 50:50 across generations, a collective property of the species. The mechanisms whereby this occurs are quite different in different species, but knowing those mechanisms does not provide any additional explanation nor understanding beyond the macro-level account: that if one sex begins to slip into a majority, fewer of that sex will have mating partners of the opposite sex and therefore fewer of their traits will propagate to the next generation. If we discovered life on another planet that was not DNA-based (i.e., realized in a different mechanism), we could expect to find the same sex ratios.

Greve writes that "we cannot make assumptions about collective entities without already integrating a concept of individuals into the vocabulary of sociology" (p. 33). But of course we can; such assumptions and theories are found throughout the history of sociology. Ultimately, Greve does not provide an argument to support these claims. Such an argument would have to provide an account of why social properties and laws necessarily incorporate individual properties and laws.

NRI does not claim that there are irreducible social properties and laws; it is more modest. I have always maintained that it is an empirical question whether or not there exist irreducible social properties and laws. NRI is simply a framework that shows how it might be the case that emergent social properties are multiply realized in wildly disjunctive realizations. Thus the issues cannot be debated strictly on a theoretical level. If it can be demonstrated empirically that a wildly disjunctive, multiply realized social property exists, then that property is irreducible and may have autonomous causal powers. If no such properties can be empirically identified, then Greve (and other methodological individualists) are correct. (Greve quotes Fodor

making the same point on p. 13.) Greve argues that there aren't many such laws that have been identified: "it can be disputed that these laws or generalizations can be formulated without finally resorting to specific, individual characteristics" (p. 19); I agree, and addressing this empirical question should be at the center of sociological work.

I have attempted to integrate my theoretical arguments with two other strands of work. The first is to study the implications of the new modeling technology of multiagent simulation (Sawyer 2003a). Although most social simulations are grounded in methodologically individualist assumptions, I have argued that simulations to date in fact demonstrate the limitations of the approach. That is because each simulation captures only one realizing instance of a social phenomenon, and as such, they tend to have limited explanatory power (Sawyer 2007). I have argued that the history of these simulations shows what happens when an autonomous social level is neglected—a lack of generalizability and of explanatory power.

The second is my own empirical studies of symbolic interaction in improvisational theater groups (Sawyer 2003b, 2003c). In these empirical studies, I have frequently observed the emergence of collective phenomena that are not obviously reducible to individual properties. In a series of rigorous empirical analyses of improvised theater dialogues (Sawyer 2003c; Sawyer and DeZutter 2009), I have demonstrated the emergence of group properties—elements of the dramatic frame, including characters, relationships, and plot elements. I have demonstrated that these are difficult to reduce to an individual level of explanation. I also have provided empirical evidence of downward causation: the dramatic frame, once it has emerged, then constrains and enables what actions actors can take.

There are other new scientific developments that may contribute to these debates. The new science of social networks, which has rarely played a role in debates about emergence, would seem to provide support for social causation. Findings like Burt's regarding "structural holes" (1992, 2004) show that network structures have causal implications for the individuals occupying particular network locations (see Greve on Blau, pp. 20-24). Woolley et al. (2010) recently demonstrated that group performance on a variety of tasks can only be partially explained in terms of properties of individual members of the group. I believe this potentially provides evidence for irreducible emergent group properties.

I grant that one could take issue with my interpretations of my own improvised theater data, and of the Woolley et al. (2010) finding. But it remains the case that no methodological individualist has empirically demonstrated a reduction of emergent group properties to the time-course sequence of successive individual acts. The reduction, should a methodological individualist attempt it, would necessarily require a sophisticated interaction analysis of the symbolic meanings of each act; their successive coherence and relevance; and how they are interpreted and taken up by other participants. Until these

empirically observed emergent group properties have been reductively explained in terms of individuals and their interactions, the case for methodological individualism remains unproven.

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Bio

Keith Sawyer, PhD, is a professor of psychology, education, and business at Washington University in St. Louis. He studies creativity and learning in collaborating groups. His approach is inspired by his early empirical studies of the interactional processes in jazz ensembles, improvisational theater groups, and children at play. Sawyer connects these phenomena to learning within a theoretical framework, in the tradition of sociocultural psychology and distributed cognition, that he has called "collaborative emergence." He has studied collaborative learning groups in classrooms and other settings, and collaborative creativity in teacher teams and in business organizations. In his current research, he is studying how teaching and learning are organized in professional schools of art and design, with the goal of identifying a core set of features that can be used to design more effective learning environments.