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# Explanatory Autonomy and Coleman's Boat \*

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**ABSTRACT:** The paper addresses the question of whether an actor-centered social ontology can admit of relatively autonomous social causal explanations. It offers an alternative to the theory of social causation represented by Coleman's Boat, according to which all macro-explanations must proceed through micro-level processes. The paper argues instead that the examples of other special sciences demonstrate the validity of the idea of "relative explanatory autonomy" in the case of social causal reasoning. These considerations provide a basis for affirming the legitimacy of causal statements about meso-level causal relations.

**Keywords:** causal mechanisms; causal powers; microfoundations; social structure; methodological localism.

**RESUMEN:** El artículo aborda el problema de si una ontología social centrada en el agente puede admitir explicaciones causales a nivel social relativamente autónomas. Se ofrece una alternativa a la teoría de la causación social representada por el barco de Coleman, según la cual toda macro-explicación debe articularse sobre micro-procesos. Defendemos que los ejemplos de otras ciencias particulares demuestran la validez de la idea de una "relativa autonomía explicativa" en el caso del razonamiento causal sobre procesos sociales. Estos principios justifican la afirmación de la legitimidad de los enunciados causales sobre meso-relaciones causales.

**Palabras clave:** mecanismos causales; poderes causales; microfundamentos; estructura social; localismo metodológico.

## 1. Introduction

The micro-macro link plays a central role in some contemporary approaches to sociology, including in particular the emerging field of analytical sociology associated with Peter Hedström.<sup>1</sup> How should we think about the relationship between social structures and the population of actors whose activities define them? At what level should we expect social causation to operate? Most fundamentally, does social explanation need to proceed from actors to social outcome, along the struts of Coleman's boat?

It has been standard in this literature to distinguish between "macro" and "micro" levels of social life. The macro-level involves large social entities and forces; the micro-level involves individuals acting out of their own states of agency and their interactions with other individuals. But this vocabulary truncates the social world; it leads us to think that the distinction between levels is a bifurcation between the "social" and

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<sup>1</sup> Peter Hedström's *Dissecting the Social: On the Principles of Analytical Sociology* (Hedström 2005) serves as a manifesto for the Analytical Sociology approach, and Pierre Demeulenaere, ed., *Analytical Sociology and Social Mechanisms* (Demeulenaere 2011) and Peter Hedström and Peter Bearman, eds., *The Oxford Handbook of Analytical Sociology* (Hedström and Bearman 2009) provide substantive foundations for several areas of research within this approach. The European Network of Analytical Sociologists provides an institutional framework within which research approaches and findings can be shared.



the “actor”. More realistic is the understanding that there are social compounds at a range of levels of organization, with different scope and reach. The “world trading system” to which Immanuel Wallerstein (Wallerstein 1974) refers is at a particularly high level; the concrete merchant networks of London in the seventeenth century lie at an intermediate level; and the particular creditor relations that existed with a particular group of investors and a merchant captain are at a yet lower level. I find it convenient to keep this range of levels in mind by referring to “meso” level social processes as well as macro and micro level processes (Little 2006).

So what is the relationship between levels of social and individual entities? My preferred approach is the microfoundations requirement. This approach highlights the important point that all social facts, social structures, and social causal properties depend ultimately on facts about individuals within socially defined circumstances. Social ascriptions require microfoundations at the level of individuals in concrete social relationships (Little 1994, Little 2011). According to this way of understanding the nature of social ontology, an assertion of a structure or process at the macro-social level (causal, functional, structural) must be supplemented by some kind of account of how it is that ordinary actors, situated in specified circumstances, come to act in ways that produce the stipulated structures and causal processes. So if we want to make assertions about the causal properties of states and governments, we need to arrive at an analysis of the institutions and constrained patterns of individual behavior through which the state's causal characteristics are effected. We need to raise questions such as these: How do states exercise influence throughout society? What are the institutional embodiments at lower levels that secure the impact of law, taxation, conscription, contract enforcement, and other central elements of state behavior? If we are concerned about the workings of social identities, then we need to inquire into the concrete social mechanisms through which social identities are reproduced within a local population – and the ways in which these mechanisms and identities may vary over time and place. And if we are interested in analyzing the causal role that systems of norms play in social behavior, we need to be able to say something about some of the specific institutional practices through which individuals come to embrace a given set of norms.

Some researchers favor the approach of methodological individualism, and this includes the Analytical Sociology perspective. Social outcomes need to be explained on the basis of the actions of individuals. This is the whole purpose of the metaphor of “dissecting” the social (Hedström 2005).

In what follows I will make a case for broadening the understanding of social causation within the general framework of actor-centered social science. I will argue for the legitimacy of “meso-meso” causal powers, where mid-level social features like neighborhoods and organizations have effects on other mid-level social features like elevated infant mortality rates and chronic safety failures. I will argue for an alternative formulation of the central thrust of the theory of methodological individualism, which I refer to as “methodological localism”. Methodological localism provides room for a more developed theory of the actor as well as a more nuanced account of the social influences on the actor. It provides a more explicit, and I believe more adequate, spec-

ification of the idea of “structural individualism”. Next I will argue for the position of relative explanatory autonomy for mid-level social entities, parallel to arguments in other areas of the “special sciences”. According to this position in the philosophy of science, it is open to the scientist to agree that a given entity  $E$  is composed of lower-level entities  $F_i$  without being required to reduce the causal properties of  $E$  to the properties of  $F_i$ . Composition does not entail the need for reduction. Social scientists can therefore postulate “meso-meso” causal effects without embarrassment. The thrust of my arguments here, then, is intended to make room for a limited but significant amendment to the agenda of analytic sociology and to argue for the legitimacy of meso-meso causal claims. I close by examining one important example of research exploring meso-level causal effects, in the form of Robert Sampson’s analysis of neighborhood effects.

## 2. *Analytic sociology and methodological individualism*

There is quite a bit of the analytical sociology (AS) framework that I find appealing and constructive. However, I am not satisfied with the model of social causation represented by Coleman’s boat. I believe the social sciences need a social ontology that does not separate “individual” and “social” in the way that methodological individualism tends to do; and I believe that it is perfectly legitimate to attribute causal powers to meso-level social structures.

This requires answering a preliminary question, however: Is AS in fact committed to methodological individualism as a mode of explanation? Hedström addresses the issue in a footnote, where he denies that AS depends upon an “extreme” form of methodological individualism. He prefers instead “structural individualism.”<sup>2</sup> But he does not offer an explicit definition of structural individualism. Pierre Demeulenaere is a key voice within the AS movement and is the editor of an important recent volume on the approach (Demeulenaere 2011). He provides a detailed and helpful analysis of the doctrine of methodological individualism (MI) and its current status within AS. He believes that criticisms of MI have usually rested on a small number of misunderstandings, which he attempts to resolve. For example, MI is not “atomistic”, “egoistic”, “non-social”, or exclusively tied to rational choice theory. He prefers a refinement that he describes as structural individualism, but essentially he argues that MI is a universal requirement on social science. He encapsulates methodological individualism in two axioms, and indicates that AS endorses both:

Social life exists only by virtue of actors who live it;

Consequently a social fact of any kind must be explained by direct reference to the actions of its constituents. (Demeulenaere 2011, 3-4)

This description involves two separate assertions: social things are *composed* of individual actions and nothing else; and “consequently” social outcomes must be *explained* on

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<sup>2</sup> “To avoid possible misunderstandings, it should be pointed out at the outset that this emphasis on action-based explanations does not imply a commitment to any extreme form of methodological individualism that denies the explanatory importance of pre-existing social structures. The position taken here is what Udehn (2001) refers to as ‘structural individualism’.” (Hedstrom 2005, chapter 1, fn. 4)

the basis of facts about individual actions. But the inference does not hold. It is entirely plausible that a meso-level set of phenomena may support explanations that are "relatively autonomous" from the entities that compose them.

Demeulenaere specifically disputes the idea that MI implies a separation between society and non-social individuals. He believes that even the originators – Watkins and Mill, for example – recognized that individuals are social organisms. But he believes this recognition can be folded into a consistent elaboration of MI that he describes as structural individualism (discussed further below).<sup>3</sup>

That said, Demeulenaere endorses the idea that AS depends upon and presupposes MI.<sup>4</sup> Further, Demeulenaere holds that AS depends closely on the methodology of social causal mechanisms at the level of the actor.<sup>5</sup> The "analytical" part of the phrase involves identifying separate things, and the social mechanisms idea says how these things are related. And, more specifically to the AS approach, the mechanisms are supposed to occur solely at the level of the actors – not at the meso or macro levels.

Therefore the focus has to be on the causal "process" occurring at the action level. The idea that there are laws directly implemented at a macro level can be easily rebutted, since the effectiveness of the outcome necessarily leads to the "active" level, the level of action. One general implication of the notion of "mechanism" is to move analysis away from an "inactive" level to an "active" level, where effective actions occur. A strong correlation between variables should not therefore be interpreted in causal terms unless a mechanism linking the two dimensions is identified, mechanisms involving effective actions. (Demeulenaere 2011, 15)

So this implies that AS would not countenance a meso-level mechanism like this: "the organizational shortcomings of the Nuclear Regulatory Commission lead to a pattern of safety violations in the US nuclear industry" (as argued by Diane Vaughan (Vaughan 1996) and Charles Perrow (Perrow 2011)). Both features are meso-level factors or conditions, and it would appear that AS would require that their causal properties be unpacked onto individual actors' behavior.

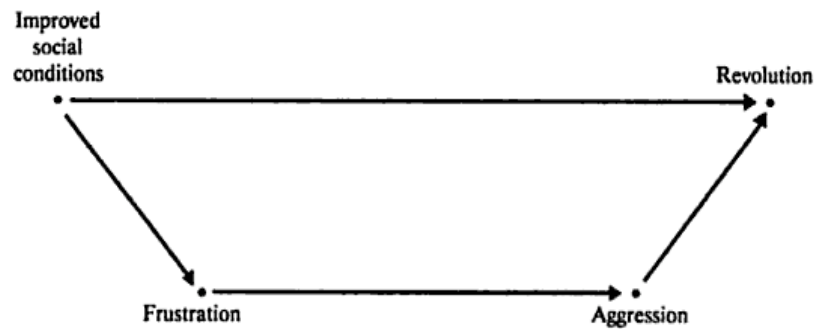
This version of methodological individualism is often illustrated by reference to "Coleman's Boat" (Coleman 1990, 10). The diagram indicates the relationship between macro-factors (improved social conditions, occurrence of revolution) and the micro factors that underlie their causal relation (frustration, aggression). Macro causal connections need to be specified by delineating the patterned behaviors at the individual level that bear them out.

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<sup>3</sup> "The combination of these two approaches can be called 'structural individualism' (Wippler 1978; Udehn 2001). Any serious attempt to reflect on a social situation should deploy both in turn. Their combination is in some respect illustrated by Coleman's famous 'boat' (1986, 1990). It remains a central aspect of analytical sociology" (Demeulenaere 2011, 6).

<sup>4</sup> "Does analytical sociology differ significantly from the initial project of MI? I do not really think so. But by introducing the notion of analytical sociology we are able to make a fresh start and avoid the various misunderstandings now commonly attached to MI" (Demeulenaere 2011, 10).

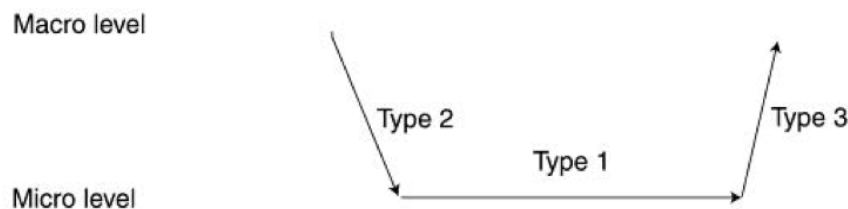
<sup>5</sup> "Analytical sociology incorporates an affirmation that "social facts" are generated, triggered, produced, brought about, or "caused" by individual actions which themselves are in some sense "caused", or at least partly determined by, the constraints presented by the social environments and situations in which such actions take place" (Demeulenaere 2011, 12).



**Figure 1.3** Macro- and micro-level propositions: effects of improved social conditions on potential for revolution.

*Figure 1: Macro-micro relations according to Coleman*  
 [Source: Coleman 1990, 10: figure 1.3.]

In his detailed and insightful discussion of methodological individualism Lars Udehn labels the arrows this way, with three forms of causal connection that are valid for Coleman (Udehn 2001, 300):



*Figure 2: Macro-micro relations according to Udehn*  
 [Source: Udehn 2001, 300: figure 10.2.]

Type 4 connections – macro to macro – are ruled out (“the macro level is an abstraction, nevertheless an important one” [Coleman 1990, 12]); so causal influence for macro factors can only work through disaggregated effects at the micro level. We might refer to Type 3 connections as aggregative, and Type 2 as formative; Type 3 represents the composition of the macro-level effect through the activities of individuals at the micro-level, along the lines illustrated by Thomas Schelling (1978). And Type 2 represents the “shaping”, “forming”, and “constraining” of individuals that occurs when a macro-level entity affects them – schools, norms, institutions. Type 1 relations are connections within the individual’s psychology and agency.

Udehn characterizes Coleman's position as "structural individualism" (p. 304). He characterizes structural individualism in these terms.

In structural individualism, on the other hand, actors are occupants of positions, and they enter relations that depend upon these positions. The situations they face are interdependent, or functional related, prior to any interaction. The result is a structural effect, as distinguished from a mere interaction effect. In addition to natural persons, then, there are social positions and corporate actors made up of social positions. The behaviour of social systems is, at least in part, determined by the structure of those systems. (p. 304)

So according to Udehn's interpretation, Coleman diverges from strict methodological individualism in that he admits the "structural" effects of organizations and positions within them: that these system-level characteristics have effects on social behavior at the individual level that are different from the mere aggregation of independent interests among individuals. Further, Udehn highlights (though Coleman does not) the fact of socialization: the fact that individuals are socialized by macro-institutions, with the result that their behavior at the micro level is already conditioned by features of the macro value system – ways of thinking, ways of valuing, ways of interpreting. "Every individual living in society is socialised and internalises, in varying degrees, the values and beliefs prevailing in the society, or group, to which he/she belongs" (Udehn 2001, 301).

So how does *structural* individualism play out, in Coleman's theory and Udehn's re-telling? It seems to have only two specific consequences, one having to do with roles and one having to do with norms. And in neither case does Coleman allow for the possibility of autonomous social causation from one macro-level fact to another. Roles are important in Coleman's theory because he thinks that "non-natural persons" are actors as well; and it often occurs that a natural person's actions are derived from the role he or she plays within a social hierarchy. Coleman also acknowledges the fact that norms play a role in social action, but always along the Type 3 strut, and never with any detailed analysis of how a socially embodied fact about a norm actually impinges upon the individual.

It is hard for me to see that Coleman's construction could provide a promising framework for doing substantive sociological research. The theory is ideal for the purpose of modeling stylized interactions and complexes of social actions. It provides a malleable basis for simulation of social situations. But it abstracts from the rich complexity of human agency in a way that seems assured to lead to failure when applied to real social phenomena. Virtually every theory of agency acknowledges the importance of "purposiveness" within a theory of action. So rational choice has a role to play within an adequate theory of the actor. But the deficiency of this hyper-abstract rational-choice axiomatization of action is precisely that it assumes away the complexity and multi-dimensionality of real human action.

What I object to in this picture is that it seems to require social explanations to proceed through the actions of individuals. Further, Coleman's theory of the actor is a particularly thin one grounded in a narrow understanding of interests and rationality. It is a remarkably sketchy theory of human action; it is designed to permit mathematical modeling rather than to provide a language in terms of which to describe ordinary human behavior. In Coleman's formulation, an actor is defined in terms of a set of in-

terests and goals, a set of beliefs about the environment of choice, and a decision rule. These assumptions permit the theorist to reason about choices and interactions in complex social settings. These actors can then be introduced into an aggregative model to simulate the consequences of their choices. Essentially this approach seems to imply that only agent-based simulations will provide acceptable explanations of “macro-macro” effects; which means that we are compelled to give up the Type 4 (macro-macro) explanation in favor of a trip through Coleman’s boat, formalized with an agent-based simulation.

The position I defend is defense of Type 4 explanations based on three ideas. First, macro entities (organizations, institutions, normative systems) often have stable characteristics with behavioral consequences. Second, those entities must have microfoundations; we must be confident that there are individual behaviors at lower levels that support these macro characteristics. But third, it is legitimate to draw out the macro-level effects of the macro-circumstance under investigation, without tracing out the way that effect works in detail on the swarms of actors encompassed by the case. The requirement of microfoundations is not a requirement on explanation; it does not require that our explanations proceed through the microfoundational level. Rather, it is a condition that must be satisfied on *prima facie* grounds, prior to offering the explanation. I refer to this position as “relative explanatory autonomy” of the meso-level. In short, we are not obliged to trace out the struts of Coleman’s boat in order to provide a satisfactory macro- or meso-level explanation or mechanism.

Two major types of questions need to be considered at this point. First, what is the nature of the actors and their actions that constitute the ontological foundation of social structures on either the microfoundations approach or the methodological individualism approach? And second, what room does the ontology of microfoundations leave for autonomous social explanation?

### 3. *Methodological localism*

I believe that there are numerous reasons for favoring an “actor-centered” approach to social science. However, this does not entail acceptance of methodological individualism. Instead, I offer a social ontology to which I refer as methodological localism (ML) (Little 2006). This view of social ontology provides the conceptual resources needed to permit us to think more clearly about the forms of social influence that exist at many levels in the social world. This theory affirms that there are large social structures and facts that influence social outcomes. But it insists that these structures and forces are only possible insofar as they are embodied in the actions and states of socially constructed individuals. The “molecule” of all social life is the *socially constructed and socially situated individual*, who lives, acts, and develops within a set of proximate social relationships, institutions, norms, and rules.

The theory of methodological localism begins with the socially constituted person. Human beings are subjective, purposive, and relational agents. They gain their features of mentality and agency through ongoing social institutions and organizations. They interact with other persons in ways that involve competition and cooperation. They form relationships, enmities, alliances, and networks; they compose institutions and



organizations. They acquire beliefs, norms, practices, and worldviews, and they socialize their children, their friends, and others with whom they interact. These individuals constitute social structures and norms at a variety of levels.

This is a form of influence that looks pretty much like an amalgam of Types 2 and 1 in Udehn's diagram above: the structuring of the individual's development that occurs through schooling, family, military, etc., is essentially a Type 2 relationship; and the mutual adaptation and change that occurs as individuals interact within society is a Type 1 relationship.

At the level of the socially constituted individual we need to ask two sorts of questions: First, what makes individual agents behave as they do? Here we need accounts of the mechanisms of deliberation and action at the level of the individual. What are the main features of individual choice, motivation, reasoning, and preference? How do emotions, rational deliberation, practical commitments, and other forms of agency influence the individual's deliberations and actions? This area of research is purposively eclectic, including performative action, rational action, impulse, theories of the emotions, theories of the self, or theories of identity.

Second, how are individuals formed and constituted? Methodological localism gives great importance to learning more about how individuals are formed and developed – the concrete study of the social process of the development of the self. Here we need better accounts of social development, the acquisition of worldview, preferences, and moral frameworks, among the many other determinants of individual agency and action. What are the social institutions and influences through which individuals acquire norms, preferences, and ways of thinking? How do individuals develop cognitively, affectively, and socially? So methodological localism points up the importance of discovering the microfoundations and local variations of agency, social psychology, and identity and the construction of the historically situated self.

So far we have emphasized the socially developed individual. But social action takes place within spaces that are themselves socially structured by institutions and the actions and purposes of others – by property, by prejudice, by law and custom, and by systems of knowledge. So our account needs to identify the local social environments through which action is structured and projected: the inter-personal networks, the incentive systems, the systems of rules, the social institutions. The social thus has to do with the behaviorally, cognitively, and materially embodied reality of social institutions.

It is important to emphasize that ML affirms the existence of social constructs beyond the purview of the individual actor or group. Political institutions exist – and they are embodied in the actions and states of officials, citizens, criminals, and opportunistic others. These institutions have real effects on individual behavior and on social processes and outcomes – but always mediated through the structured circumstances of agency of the myriad participants in these institutions and the affected society. This perspective emphasizes the contingency of social processes, the mutability of social structures over space and time, and the variability of human social systems (norms, urban arrangements, social practices, and so on).

#### 4. *Relative explanatory autonomy*

Does the extended social world have causal powers? This question can be formulated in terms of Coleman's and Udehn's analysis of the micro-macro relation: are causal mechanisms of Type 4 legitimate or not? That is, can we assert causal relations from one set of macro features to another set of macro outcomes?

In beginning to address this question it is worth considering the practice of working sociologists and other social scientists. Some areas of the social sciences have largely adopted an ontology that defers to methodological individualism and the logic of Coleman's boat – for example, the formal and rational choice wings of political science. But this is not true in sociology. We observe in sociology a persistent willingness to attribute causal powers to social structures at a variety of levels. When Michael Mann describes the effects of paramilitary organizations in Germany in the 1920s, he relies on a number of assertions about the causal powers of these organizations when introduced into the social circumstances of the 1920s (Mann 2004). He is prepared to say how these effects work – so he satisfies the microfoundations requirement. But his explanation is a meso-level one, proceeding from the meso-level causal properties of paramilitary organizations to another set of meso-level effects.

Working sociologists offer explanations like Mann's on a regular basis. They identify what they take to be causal properties of social structures and institutions, and then draw out causal chains involving those causal properties. And often they are able to answer the follow-on question: how does that causal power work, in approximate terms, at the micro level? But answering that question is not an essential part of their argument. They do not in fact attempt to work through the agent-based simulation that would validate their general view about how the processes work at the lower level.

This explanatory framework seems entirely reasonable in the social sciences. It does not seem necessary to disaggregate every claim like “organizational deficiencies at the Bhopal chemical plant caused the devastating chemical spill” onto specific individual-level activities. We understand pretty well, in a generic way, what the microfoundations of organizations are, and it isn't necessary to provide a detailed account in order to have a satisfactory explanation. In other words, we can make careful statements about macro-macro and macro-meso causal relations without proceeding according to the logic of Coleman's boat – up and down the struts.<sup>6</sup> So one argument for the relative autonomy of meso-level causal claims is precisely the fact that good sociologists do in fact make credible use of such claims.

The idea of relative explanatory autonomy has also been invoked by cognitive scientists against the reductionist claims of neuro-scientists.<sup>7</sup> Of course cognitive mecha-

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<sup>6</sup> Ronald Jepperson and John Meyer make this point in a recent article on methodological individualism (Jepperson and Meyer 2011), and they offer an alternative to Coleman's macro-micro boat that incorporates explanations referring to meso-level causes (Jepperson and Meyer 2011, 66).

<sup>7</sup> Here is a statement of the idea of relative explanatory autonomy, provided by a distinguished philosopher of science, Lawrence Sklar, with respect to areas of the physical sciences: “Everybody agrees that there are a multitude of scientific theories that are conceptually and explanatorily autonomous

nisms must be grounded in neurophysiological processes. But this doesn't entail that cognitive theories need to be reduced to neurophysiological statements.<sup>8</sup>

These points leave room for a meta-theory of relative explanatory autonomy for social explanations. The key insight here is that there are good epistemic and pragmatic reasons to countenance explanations at a meso-level of organization, without needing to reduce these explanations to the level of individual actors.

These arguments are directly relevant to the social sciences, subject to several important caveats. First is the valid requirement of microfoundations: we need always to be able to plausibly connect the social constructs we hypothesize to the actions and mentalities of situated agents. And second is the requirement of ontological and causal stability: if we want to explain a meso-level phenomenon on the basis of the causal properties of other meso-level structures, we need to have confidence that the latter properties are reasonably stable over different instantiations. For example, if we believe that a certain organizational structure for tax collection is prone to corruption of the ground-level tax agents and want to use that feature as a cause of something else, then we need to have empirical evidence supporting the assertion of the corruption tendencies of this organizational form.

Explanatory autonomy is consistent with our principle requiring microfoundations at a lower ontological level. Here we have the sanction of the theory of supervenience to allow us to say that composition and explanation can be separated (Kim 1993; Zahle 2003, 2007). We can settle on a level of meso or macro explanation without dropping down to the level of the actor. We need to be confident there are microfoundations, and the meso properties need to be causally robust. But if this is satisfied, we do not need to extend the explanation down to the actors.

Once we have reason to accept something like the idea of relative explanatory autonomy in the social sciences, we also have a strong basis for rejecting the exclusive validity of one particular approach to social explanation, the reductionist approach associated with methodological individualism, analytical sociology, and Coleman's boat. Rather, social scientists can legitimately use explanations that call upon meso-level causal linkages without needing to reduce these to derivations from facts about individuals. And this implies the legitimacy of a fairly broad conception of methodological pluralism in the social sciences, constrained always by the requirement of microfoundations.<sup>9</sup>

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with respect to the fundamental concepts and fundamental explanations of foundational physical theories" (Sklar 2006).

<sup>8</sup> Sacha Bem reviews these arguments in "The Explanatory Autonomy of Psychology: Why a Mind is Not a Brain" (Bem 2011). Michael Strevens summarizes some of these issues in "Explanatory Autonomy and Explanatory Irreducibility" (Strevens 2011). And Geoffrey Hellman addresses the issues of reductionism and emergence in the special sciences in "Reductionism, Determination, Explanation" (Hellman 2011).

<sup>9</sup> This is very much in alignment with the view argued by Dave Elder-Vass in *The Causal Power of Social Structures*, though he uses the language of emergence to make his point (Elder-Vass 2010). Elder-Vass accepts the point that agency and structure are inseparable; neither functions as a solely sufficient cause of social outcomes. But he argues strongly for the idea that social structures have causal powers that are not reducible to facts about individuals.

### 5. *Microfoundations for meso causation*

So how does the micro-macro link look when we attempt to provide the idea of meso explanations with microfoundations? The various versions of methodological individualism – microeconomics, analytical sociology, Elster's theories of explanation, and the model of Coleman's boat – presume that explanation needs to invoke the story of the micro level events as part of the explanation. The perspective offered here requires something quite different. This position requires that we be confident that these micro-level events exist and work to compose the meso level; but it does not require that the causal argument incorporates a reconstruction of the pathway through the individual level in order to have a satisfactory explanation. This account suggests an alternative diagram to Coleman's boat.

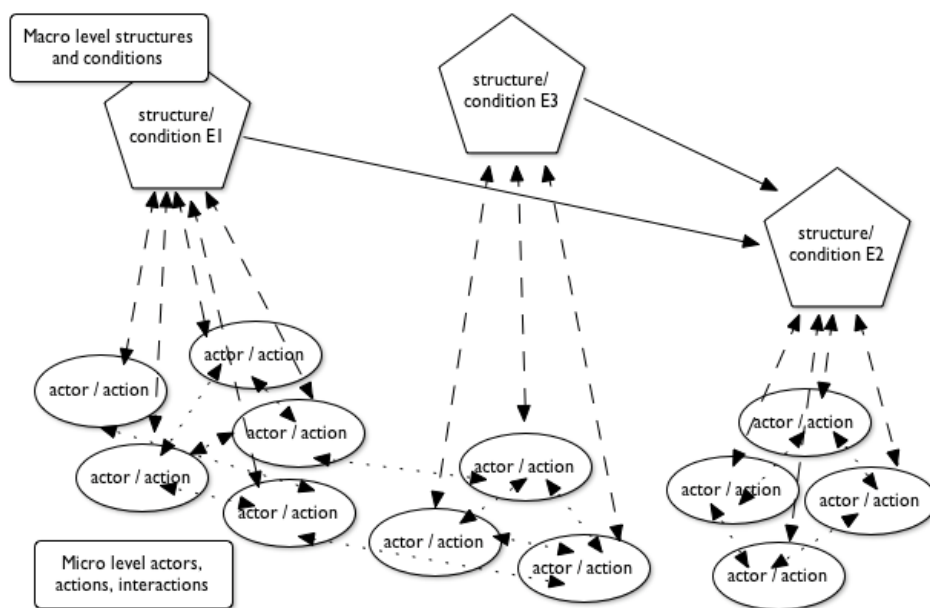


Figure 3: *A model of meso causation with microfoundations*

The diagram represents the meso-level claim that E1 and E3 jointly cause the occurrence of E2. The meso causal relation is represented as a single-directional horizontal solid arrow. The dashed arrows moving vertically on the diagram represent the micro-foundations of each meso factor. These causal relations are bidirectional: individual actors are influenced by the meso factor, and their actions have influences on the meso factor. The dotted arrows moving horizontally on the bottom of the diagram, final-

ly, represent inter-actor influences at the micro level: network relationships, alliances, communications channels, exemplary behavior, mobilization efforts, etc.

The diagram represents each of the causal linkages represented in the Coleman boat. But it calls out the meso-meso causal connection that Coleman prohibits in his analysis. And it replaces the idea that causation proceeds through the individual level, with the idea that each meso level factor has a set of actor-level microfoundations. But this is an ontological fact, not a prescription on explanation.

Finally, it is self-evident that we can always ask a different question that looks more like Coleman's: how does the causal property of the meso factor work at the level of the actor? But this is a different question, and we are not required to incorporate the resulting story into the meso-meso explanation, any more than a cognitive scientist is obligated to provide a neurological account of the computational capabilities he or she identifies.

### *6. Neighborhood effects*

Are there important examples of sociological research that embody the aspiration to discovering meso-level causes while respecting the requirement of microfoundations? An important recent example is research by Robert Sampson and a series of collaborators on the topic of "neighborhood effects". Sampson and his collaborators provide a detailed example of sociological theorizing that makes use of meso-level causal mechanisms (Sampson, Morenoff et al. 2002; Sampson 2010). This research makes an explicit attempt to line up the neighborhood-effect literature with some of the issues of analytical sociology. Most important is the fact that neighborhood effects are thought to be "emergent" or autonomous with respect to the individual characteristics of the people who make up the population.

Sampson's contribution to the Demeulenaere volume discussed above is specifically relevant to the analytical sociology agenda. His research is aimed at evaluating the view that there are supra-individual characteristics of "neighborhoods" that have demonstrable empirical effects on individuals, and that these effects cannot be reduced to simple aggregates of individual characteristics. His research attempts to create some new ways of measuring or describing neighborhood-level properties (what he refers to as "ecometrics", in analogy with "psychometrics"), and to reflect on some possible mechanisms that might work from this level of analysis to the individual level of the people who make up the neighborhood.

Sampson explicitly parts company with "Coleman's boat", offering a multi-level and multi-dimensional causal model of "neighborhood structure, social-spatial mechanisms, and crime rates" (Sampson 2010, 236: figure 11.1).

Despite the real promise of analytical sociology, I conclude that methodological individualism would do well to grant social context and macro-level factors an equal forum in theories of neighborhood effects. (Sampson 2010, 245)

Ultimately, then, higher-order processes that induce structure at the neighborhood level require a different way of thinking than the individualist and largely micro-level approaches of existing experimental paradigms. (Sampson 2010, 245)

Sampson's work, with a handful of different collaborators, is a very impressive example of the possibility of bringing together very rigorous quantitative methods with a social realist's interest in causal mechanisms and a non-reductionist's willingness to assign causal powers to supra-individual structures and conditions. The systematic effort to introduce methods for observing and measuring "neighborhood-level" characteristics – what they call ecometrics – is a valuable addition to the toolbox for sociological analysis at a range of levels of social activity.

### *7. Drawing conclusions*

I have sought to establish several key ideas in this paper, all pertinent to the topic of social causation. First, I have laid out an approach to social ontology – methodological localism – that suits the idea that society depends ultimately on the activities of socially located actors. This is an ontology that corresponds to an actor-centered view of the social sciences. This ontology also invites a more nuanced and discriminating theory of the actor than is elicited by methodological individualism and rational choice theory. We are led to ask questions about socialization, institutions, moral psychology, and culture that are all pertinent to understanding how socially situated individuals behave. And we are led to ask about the complex processes of aggregation and interaction that occur to transmit causal influence in both directions.

Second, I have made the case that this view of the fundamental nature of the social world is compatible with the idea of relative explanatory autonomy at the meso level, permitting us to attribute causal powers to meso-level social structures and entities. The social sciences are entitled to take the force of arguments against reductionism in other areas of scientific theorizing, including cognitive science, and to make the case for the relative autonomy of the effects of some of the meso-level entities and structures that they identify. Sociologists are not methodologically at fault when they refer to things like paramilitary organizations, representative democracies, bureaucracies, and the Islamic norms of Zakat, and they are entitled to explore the causal consequences that these meso-level structures and entities have on other such entities.

Third, this line of philosophical argument provides a basis for amending the classic Coleman diagram, in order to permit direct meso-meso causal linkages. These attributions are subject to the requirement of microfoundations, to be sure; but the examples provided here demonstrate that it is not generally difficult to provide those foundations. Fundamentally the microfoundations requirement functions similarly to the physicalism requirement in the philosophy of mind.

Finally, I believe that this approach to understanding social causes and social mechanisms is compatible with much of the best and most rigorous empirical and theoretical research taking place in sociology today. A wide range of sociologists in the area of comparative historical sociology make routine use of meso-causal properties. Arguments offered here provide a theoretical justification for their doing so, if such a justification is necessary.

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