

# Metaphysics in Social Science

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**Abstract:** Recent work in “esoteric metaphysics” – on such topics as coincident entities, ontological dependence, and the grounding relation – strikes many philosophers as a waste of philosophical talent, and as entirely irrelevant to the sciences. In this paper, I defend some practical uses for esoteric metaphysics in the social sciences. I begin by discussing ways in which errors about the supervenience of social entities has adversely affected models in the social sciences. I argue that more “esoteric” problems in social ontology have similar implications for the construction of social models.

**Keywords:** ontological dependence, grounds, metaphysics, social science, ontology, supervenience

My aim in this paper is to discuss some practical uses of “esoteric metaphysics” in the social sciences. To call some domain of metaphysics “esoteric” is, of course, pejorative. I take the term from Thomas Hofweber, who uses it in criticizing recent work by metaphysicians on theories of grounding and ontological dependence (Hofweber 2009). Like many others critical of the metaphysical turn in recent philosophy, Hofweber follows Carnap in arguing that such theories ask empty questions, either meaningless or unanswerable in principle.

Even philosophers of science favorable to milder subfields of metaphysics, such as work on causation, laws, probability, and interlevel relations, are often hostile toward metaphysics’s more rarefied corners. As soon as a metaphysician begins to worry about coinciding objects such as lumps and statues, or questions of ontological dependence and what grounds what, they

take her to have gone off the rails, or at least to be fixating on matters irrelevant to scientific practice.

In my own work on modeling in social science, however, I have found recent discussion of coincidence, grounding, and ontological dependence, nascent though it is, to be all but indispensable. I will begin with some metaphysics that may or may not qualify as “esoteric,” connecting metaphysics to issues in modeling, and then connect the same issues in modeling to the more esoteric investigations.

In particular, I will begin by presenting some results about the metaphysical thesis known as “ontological individualism.” This thesis, widely held among philosophers and social scientists as being trivially true, informs both theorizing and the practice of social science. I have argued elsewhere that this thesis, even interpreted generously, not only fails to be trivial, but is false. Cashing out and evaluating the claim involves various forms of the “supervenience” relation, a piece of metaphysical machinery once taken to be esoteric but now so familiar that its use goes unremarked even by most opponents of recent metaphysics. I will briefly discuss one aspect of these results, indicating how errors about supervenience have adversely affected extant models. Next I will turn to a harder problem in social ontology, where it becomes unavoidable to inquire into the nature of ontological dependence and where matters of grounding become central. And I will discuss how this, too, should affect modeling practices in the social sciences.

Up front I should acknowledge that some people will accuse me of taking the social sciences too seriously. In many ways, it is rather obvious that social ontology has played a crucial role in the social sciences from its inception, whether in the psychologistic and behavioristic foundations of economics in the 19<sup>th</sup> and early 20<sup>th</sup> centuries, or in grappling with the notions of social structure and function in sociology from Marx to Saussure to Parsons to

Giddens, or in the development and controversies over practice-theories in recent years. All of these developments have been accompanied, if not spurred in the first place, by views on the nature of social entities and on the basic constituents of social states of affairs. So it may be regarded as obvious that the problem is taking the social sciences to truck in entities at all. Because if we do so, or if we allow ourselves to speak of social objects or properties as if they are real, we have opened the metaphysical floodgates.

Inasmuch as that is meant to be an objection to esoteric metaphysics, it is self-undermining. To deny that the social sciences have a subject matter is already to have a potent-enough metaphysical view that one is in the company of such esoteric metaphysicians as mereological nihilists. It is possible that this will turn out to be the correct view, and that terms in the social sciences should be stripped of their referents. But in the unlikely case that should turn out to be so, it will represent an unfortunate victory for esoteric metaphysics, rather than spelling its irrelevance.

A more serious and plausible view is that even admitting a role for the social sciences and its objects, much metaphysical inquiry has been ill-conceived and overblown, and in particular that esoteric topics such as the nature of grounding and the priority of dependence have no place in the sciences. This is the view I mean to respond to here.

### **Individualism and the locality fallacy**

Ontological individualism is a metaphysical claim about the relation of social facts or properties to individualistic facts or properties.<sup>1</sup> It is usually cashed out in terms of a form of the supervenience relation, to analyze the “local” claim *the social properties of any entity*

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<sup>1</sup> Historically, the ontological issues pertaining to the dependence of social properties on the properties of individual people were mixed up with issues pertaining to reductive explanation. Recent work has been careful to separate ontological individualism from “explanatory individualism.” It is common for contemporary anti-reductionists to endorse ontological individualism and deny explanatory individualism. Cf. (Lukes 1968; Pettit 2003).

*exhaustively depend on that entity's individualistic properties, or the "global" claim the social properties holding in a world depend on the individualistic properties holding of and among individual people in that world.*<sup>2</sup>

Even understood as a global supervenience claim – which is a very weak claim – ontological individualism turns out to be false.<sup>3</sup> At the heart of ontological individualism are several fallacies about the ontology of social properties. They are what we might call “anthropocentric” fallacies, arising as a result of overestimating the extent to which social properties depend on individual people. Obviously social properties depend to some extent on people. That does not mean, however, that these properties are fully determined by (or are exhausted by or supervene on) individualistic properties.

This general point is one I have discussed elsewhere. For the present purposes, I will discuss just one of those fallacies – what I will call the “locality fallacy” – and its implications for practical models in the social sciences.

If you want to know whether it is 72 degrees in the White House right now, there is no reason to check the thermometers in Topeka. The temperature in the White House depends only on the movement of the air molecules inside the White House. If, on the other hand, you want to know whether Barack Obama is President right now, you cannot stop your investigation at the walls of the White House. That fact depends on a range of other facts, including how electors around the United States acted in 2008, what populations in various states did, what words were spoken by John Roberts, and others. Obama's being President is not just causally affected by those other factors; those factors are part of what it *is* for Obama to be President.

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<sup>2</sup> See (Kim 1984, 1987; McLaughlin 1995; McLaughlin and Bennett 2005). In (Epstein 2009), I discuss supervenience claims in connection with ontological individualism.

<sup>3</sup> That social properties globally supervene on individualistic properties is a weak claim. In (Epstein 2009), I weaken it further, and argue that it nonetheless fails.

The physical properties we investigate in the natural sciences typically depend (ontologically) on spatiotemporally local features of the objects they apply to.<sup>4</sup> Social properties typically do not. The “locality fallacy” is the fallacy of taking a nonlocal property to be a local property, i.e., taking some property P holding of an object x to depend ontologically on factors local to x, when in fact P’s holding depends on factors that are not local to x.

The method of isolation has been receding in the natural sciences for generations, as people have realized that physical systems are not “closed” systems. By “open,” people mean causally open – i.e., their behavior can only be captured by interaction with their environments. If one wants to study a living organism, it is a poor idea to take it in “isolation” from its environment, unless one wants it to die. Causal openness, however, is not the same thing as nonlocality. The digestive processes of a bacterium interact causally with its environment, but the digestive processes themselves are physically resident entirely within the bacterium’s membrane. The fact that Obama is President, however, is a fact about the population, not about Obama, and the fact that I have twenty dollars in my bank account is not local either to me or to my bank, but to larger features of the global economic system. It is true that my bank account is affected by causal interactions with the larger world. But the point here is that in addition to that, it *ontologically depends* on facts about the larger world.

Many social properties are nonlocally dependent in very straightforward ways. Consider, for instance, an obviously extrinsic property of a social group, such as being in the National League playoffs, or being charged as a corrupt organization under the RICO act. The factors determining the holding of such a property depends on factors that are not local to the bearer.

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<sup>4</sup> Nothing here turns on whether this is in fact true for natural properties. The point here is to draw the contrast between locally- and nonlocally-dependent properties.

But for such cases, it is unlikely that a modeler would fall prey to the locality fallacy. The troublesome cases are the ones where the nonlocality is not so straightforward.

When we construct models of most social properties, we cannot limit ourselves only to ones that treat the local properties of members of the group, or even to models of those properties that causally interact with members of the group. If we do limit ourselves in that way, we risk missing out on relevant factors that influence the holding of the social properties. In many cases, nonlocal factors are plausibly the predominant way that simple properties of groups can be modified, in policy interventions. A model that only focuses on the causes impinging on local properties, or a policy prescription that only intervenes so as to affect local properties, may neglect the key influences on the social phenomena they are designed to describe or affect.

Yet models of the social properties of groups nearly always overlook this point. The way social models are typically designed means that they neglect nonlocal factors that do not interact with the members of the groups, even when those nonlocal factors are constitutive of the properties being modeled.

### **A case study: corruption**

Even domains that have been modeled in sophisticated ways for years are affected by the failure to notice or take into account this supervenience failure. One good example is bureaucratic corruption. Corruption is a deeply explored and well-developed subject in economics, and models of bureaucratic corruption are representative of a wide variety of approaches to economic model-building.

The incidence of bureaucratic corruption, despite appearances, is an extrinsic property of any set of individuals who are bureaucrats, even though it is plausibly intrinsic to the population as a whole. The reason is simple, even if we endorse a psychologistic interpretation of social

properties: the incidence of bureaucratic corruption depends not only on the psychological states of the people who are bureaucrats, but also on the psychological states of the people who determine which individuals are bureaucrats.

Moreover, the incidence of bureaucratic corruption depends on population-wide factors even if those factors have no causal influence at all on the individuals who are, have been, or will ever be members of the bureaucracy. It is not that the incidence of bureaucratic corruption does not depend on the properties of bureaucrats; but rather, that it also depends on properties external to them.

Nonetheless, models of corruption in general neglect nonlocal factors that figure into the incidence of bureaucratic corruption, when those factors do not interact causally with the bureaucrats themselves. For instance, Becker and Stigler in their influential model (Becker and Stigler 1974), focus on the incentives of individual bureaucrats to make corrupt choices. They suggest that the cost of eliminating corruption simply be taken as part of the cost of setting up the proper incentive structure for bureaucrats acting as rational maximizers. To change incentives, they suppose that there is some degree of monitoring of bureaucrats being done, so that there is some probability that one accepting bribes will be caught. If caught, the bureaucrat is fired. Their solution is to make being fired increasingly costly for the bureaucrat, as the probability of being caught goes down. One way of doing this is with so-called “efficiency wages,” i.e. increasing the wages of bureaucrats to make dismissal more costly.

All of the factors affecting the incidence of bureaucratic corruption in the Becker-Stigler model are factors that impinge on the individuals directly – in particular, the salary they receive, the salary they could otherwise receive, and the probability of being caught and dismissed. To reduce aggregate corruption, the intention is to put a system of incentives in place so as to cause

bureaucrats to make different choices. The choices, taken together, fully determine the incidence of bureaucratic corruption, while external influences, such as the choice of a salary mechanism, act as causes influencing the conditions against which a bureaucrat makes her choice.

A number of models have been proposed to take account of a variety of influences on corruption that the Becker-Stigler model neglects. Among these are models that introduce various exogenous factors such as cultural influence (Oldenburg 1987), models that include the effects of hierarchy within a bureaucracy (Calvo and Wellicz 1979; Cadot 1987; Hillman and Katz 1987; Andvig and Moene 1990; Mookherjee and Png 1995; Gangopadhyay, Goswami, and Sanyal 1991; Besley and McLaren 1993; Bac 1996), and models that include causal feedback mechanisms (Bardhan 1997; Jain 2001). All of these approaches, however, resemble the Becker-Stigler model in treating the incidence of bureaucratic corruption as depending only on the intrinsic properties of the individuals who are bureaucrats.

There are, in fact, some other models that to a small extent recognize the nonlocal dependence of that property. These include general equilibrium models (Acemoglu and Verdier 1998 and 2000), and models for the market for bureaucratic jobs (Hillman and Katz 1987, Wade 1987). Yet even these models do not adequately accommodate nonlocal dependence of the incidence of bureaucratic corruption. All of the extant models of corruption consider only factors that causally interact with the bureaucrats themselves. But if we see that the property is a genuinely extrinsic one, it is clear that the incidence of bureaucratic corruption can change even if there are no changes either to the bureaucrats or to things with which they causally interact.

A fuller discussion of the implications of the locality fallacy for models of corruption may be found in (Epstein 2008), of other faults with ontological individualism in (Epstein 2009), and implications for the construction of general agent-based models in (Epstein 2011).

Moreover, in (Epstein 2009) and (Epstein 2011) I show that we must turn to an “esoteric” version of supervenience, *coincident-friendly local supervenience* (Zimmerman 1995), even to give a correct formulation of the thesis that local supervenience fails in the obvious way for social properties.

Here, however, I wish to draw a simple conclusion from the corruption case, whether these particular claims of supervenience failure should turn out to be correct or not. Facts about the ontological dependence of a property being modeled – here, the property the incidence of bureaucratic corruption – have normative implications for how good models should be constructed. Inasmuch as the property is modeled in terms of the things that determine it, we need a full picture of what exactly does determine the property if we are to construct adequate families of models. The same point extends more generally to other fallacies that lead people to endorse ontological individualism with respect to social properties. Supposing that ontological individualism – a metaphysical thesis about the dependence-base of social entities – is mistaken, we should expect that this will have implications for model construction in the social sciences.

### **The “in virtue of what” question**

The preceding case points out that in modeling a property, the choice of factors to model is often built on assumptions about the property’s supervenience base, and suggests that certain assumptions that theorists may carry from their models in the natural sciences to models in the social sciences are mistaken. Supervenience itself was, of course, just a few years ago regarded as one of the most esoteric of metaphysical relations, particularly since the many different

notions of supervenience can only be distinguished from one another using different ways of quantifying over possible worlds.<sup>5</sup>

Supervenience, however, is but one way of cashing out more general notions of ontological dependence, and there are good reasons for thinking that supervenience relations are inadequate for the task. Recent work in ontological dependence has focused on understanding what is meant when we say that one fact is the case “in virtue of” a different set of facts being the case. This relation is not just a modal covariance relation, like supervenience, but involves a certain kind of priority of domains over other domains.

Even for anti-reductionists, the idea of ontological priority is not particularly obscure or problematic, nor does it apply only to odd questions such as the logical priority of disjuncts over a disjunction, of an object over the singleton containing the object (Fine 1995), or of the universe over its parts (Schaffer 2010). Hardly anyone, for instance, thinks that economic facts, semantic or linguistic facts, and so on, are in any sense “basic” rather than being outgrowths of other features of the social world. Semantic facts, economic facts, and so on, arise in virtue of other things being the case. While the economic facts may be grounded by biological or microphysical facts, it is unlikely that the biological or microphysical facts are grounded by economic ones.

There are, of course, many theories proposing answers to the question, *In virtue of what does a social entity exist?* A popular view is that social entities are “projections” that we impose on a physical world, the most widely discussed version of which is Searle’s treatment of institutional facts (Searle 1995). Although I am not an advocate of Searle’s (or in fact any) “projection” theory of social facts, in this section I will discuss an implicit feature of his

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<sup>5</sup> Certain supervenience claims can be formed with modal operators, which need not be cashed out in terms of possible worlds. But under certain assumptions, the modal and possible worlds formulations are not equivalent. See (McLaughlin 1995).

approach that is correct, and that is useful to make explicit. Namely, that there are two different parts to an answer to the “in virtue of what” question.

Consider, for instance, Searle’s account of the existence of a dollar bill. (Or, as Searle would put it, of the institutional fact that this is a dollar bill I hold in my hand.) Searle explains that there is a “constitutive rule” in place in our society, expressible as something like:

(CR<sub>dollars</sub>) Bills issued by the bureau of printing and engraving (etc.) count as dollars in our context.

Rewriting this rule a bit, we can use it to give one answer to the question, *In virtue of what is there a dollar in my hand?* Namely: in virtue of its being a bill issued by the bureau of printing and engraving.

But this answer, of course, is incomplete, unless we also explain in virtue of what the constitutive rule is in place. Searle’s answer to this is that constitutive rules are put in place, in a context, by our collective acceptance of them. It is in virtue of collectively intentional states of various kinds being realized (i.e., the collective acceptance of a constitutive rule), that the constitutive rule is in place in the context.

Let us generalize this distinction between the two parts of the answer to the “in virtue of what” question. The first gives the conditions that an object must satisfy, in order to be a social entity of some kind. This corresponds to what is commonly called the “grounds” for the fact that the entity exists. The second gives the facts that put those conditions in place, i.e., the facts that make it the case that the satisfaction of these conditions suffices for the entity to exist. These I will call the “metagrounds” for the dollar’s existence. Applying these to the above example, the grounds for *X being a dollar* are that *X* is a bill issued by the bureau of printing and engraving (etc.) The metagrounds, on Searle’s theory, are the collectively intentional states, in virtue of

which the constitutive rule holds. The grounds, in other words, are the conditions that X must satisfy in order for it to be a dollar. The metagrounds are the facts that make it the case that those are the conditions for being a dollar.

Whether or not one holds a “projection theory” of social entities, the terminology helps clarify where various accounts differ from one another. Ladyman and Ross, for instance, follow Dennett in taking social entities to be “real patterns,” toward which a pragmatic perspective or stance is taken (Dennett 1991; Ladyman and Ross 2007). To the extent to which they are, in Dennett’s phrase, “mild realists” with respect to social entities, this amounts to a claim about the sorts of things that can serve as the grounds of social entities – patterns that satisfy certain informational conditions – and a substantive claim about the metagrounds – the intentional or pragmatic considerations that make some pattern useful or salient. Various flavors of conventionalism may also be distinguished from one another according to what they take to be the metagrounds of entities. Searle might be understood as a kind of conventionalist, if we understand conventions as being put in place through collective acceptance of a particular kind of formula. But a conventionalist might also take a Lewisian approach to conventions, in which case there are a number of different conditions that need to hold for a convention to be in place, including regularities of practice and common knowledge of various sorts (Lewis 1969), or a different approach to convention, e.g., that in (Millikan 1984).

My own view is that we should take a more liberal stance with regard both to the grounds and the metagrounds of social entities. My aim in the following, however, is not to argue for or against one treatment of social entities over another, but to point out that nearly any of these views raises questions in esoteric metaphysics, questions that also bear on model-construction in the social sciences.

## Metagrounds and model-building

In order to draw the connection between the grounds/metagrounds distinction and the practice of modeling, I will turn again to a specific case. Above I discussed the relevance of the supervenience base of an entity to the modeling of that entity. When the supervenience base is straightforward, choosing the ontology of a model may likewise be straightforward.<sup>6</sup> But if the supervenience base is misunderstood or in dispute, there is a risk that a model will neglect factors relevant to the entity's counterfactual behavior. I suggested that people have neglected potentially important factors in modeling corruption because of erroneous assumptions about the supervenience base of corruption properties.

In the scheme of things, however, corruption is an easy case. More nuanced problems are raised by a different example, at least as important to current economic discourse today: the modeling of the recent financial crisis. While there are many diagnoses as to why economists have had such a hard time modeling the crisis, one thing that has become clear is that we only have a rudimentary understanding of financial instruments, such as derivatives of credit instruments, which played an important role in precipitating the crisis. It is, for instance, poorly understood what drives the prices of such instruments, and hence how volatile we should expect them to be under various circumstances. But even more basically, it is poorly understood what makes instances of these instruments go into and out of existence. The changing of economic fundamentals is often accompanied by changes in the social entities which exist: inflation is tied to changes in the "monetary aggregates," which means changes in which money-like instruments exist over time; growth in financial markets is tied to the creation of credit instruments; and the recent financial bubble is tied to innovations in derivatives such as credit default swaps.

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<sup>6</sup> Or it may not, because it may be difficult to choose appropriate constitutive and causal factors even when the supervenience base is clear.

The modeling of a social property can go astray with a poor understanding of the dependence base of the property being modeled. At least as much as with models of corruption, this issue arises in modeling entities whose pace of creation and destruction is a primary driver of the economic phenomenon in question. In this case, what must be modeled is not only the dynamics of instances of a given set of financial instruments, but also the dynamics of which financial instruments there are, to be instanced. In other words, the counterfactuals an economic modeler may be interested in are not only ones in which there are more or fewer instances of some financial instrument *K* – i.e., ones in which the *grounds* for being a particular *K* change – but ones in which the types of available instruments change – i.e., ones in which the *metagrounds* change.

For constructing a model in which financial innovation is “endogenized,” the question of the metagrounds of a social entity is not just an academic matter. Which factors lead to such instruments being created will differ, depending on whether Searle, other projection theorists, conventionalists, or others are correct.

Suppose, for instance, that Searle’s collective acceptance account of constitutive rules is correct. Then the collective intentions of certain actors are necessary and sufficient conditions for the introduction of a new financial instrument: if those intentions are lacking, the instrument is not generated and cannot be instanced. Just as getting clear on the dependence base for corruption properties is central to modeling them well, getting clear on the different parts of the dependence base of a set of instruments, including both its grounds and metagrounds, is central to modeling changes in that set. And any approach to social entities will implicitly take a position on how they are metagrounded, so there is no avoiding this question.

Additionally, independent of what position we end up with on the metagrounds of social entities, there are thorny problems pertaining to the relation between the grounds and the metagrounds of an entity, which affect model construction. One can of worms, for instance, is the relation between the metagrounds of a social property and its supervenience base. Does the supervenience base of the property *being a credit default swap* include, for instance, the collective-acceptance attitudes toward a constitutive rule, on the part of traders in financial markets? Or are those attitudes outside the property's supervenience base?

There are good reasons to think that a property's metagrounds are part of its supervenience base. Suppose, for instance, that the fact that X is a dollar in a context requires that a constitutive rule be in place in that context. Then if the "metagrounding" facts putting that constitutive rule in place are not the case, X can satisfy the "grounding" conditions of having been produced by the Bureau of Printing and Engraving without X being a dollar. This means that the metagrounds of *being a dollar* must be counted as part of the supervenience base of the property.

But the argument on the other side is at least as strong. On a "projection" approach to social properties like Searle's, the role of the constitutive rule is to specify the conditions – often strictly physical conditions – which suffice for an object to possess the social property. A social property is much like a name or a label, which makes a physical property or "real pattern" salient. This means that the exemplification conditions for a social property are no different from those for the physical property it corresponds to. But, of course, the metagrounds are not part of the supervenience base of that physical property. Thus the metagrounds of a property such as *being a dollar* cannot be counted as part of the supervenience base of the property.

Again, my aim here is not to resolve disputes in esoteric metaphysics; it is only to point out their relevance for modeling. (Though I will say that I am inclined to favor the second argument, and reject the first.) Supposing the first answer is correct, the proper supervenience base for a financial instrument includes not only its grounds but its metagrounds, such as the rules that people in the society collectively accept. Or supposing the second answer is correct, and the supervenience base of a social property does not include its metagrounds. That suggests that to model changes of the metagrounds of a social property, we should think in terms of a changing family of models, individual models that treat one set of counterfactual circumstances against a fixed set of metagrounds, and across the family the metagrounds changing.

## **Conclusion**

Both the metaphysics of social entities and its implications for modeling are barely explored. There are few people working in the philosophy of social science, few working in social ontology, and there is little overlap between either of these groups and those investigating problems in ontological dependence and grounding. There is even less interaction between any of these groups and the people actually producing models in the social sciences. The suggestions made in this paper are only flags planted in virgin territory.

However, there are some conclusions we can confidently draw. In constructing models in the social sciences, it is unavoidable that positions be taken on the priority of entities, and that choices be made about which entities to include as relevant to evaluating the counterfactuals of interest. This means that commitments about such topics as grounding and ontological dependence are an implicit part of the work. Far from being irrelevant, the metaphysical problems some philosophers regard as so esoteric as to be empty may in fact have powerfully normative implications for day-to-day modeling in the social sciences.

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