

The Ant Trap:  
Rebuilding the Foundations of the Social Sciences

Brian Epstein

## *Table of Contents*

INTRODUCTION .....	iii
PART ONE — FOUNDATIONS, OLD AND NEW .....	1
1 Individualism: a recipe for warding off “spirits” .....	2
2 Getting to the consensus view .....	13
3 Seeds of doubt.....	27
4 Another puzzle: a competing consensus.....	42
5 Tools and terminology .....	54
6 Grounding and anchoring .....	68
7 Case study: laws as frame principles.....	82
8 Two kinds of individualism .....	96
9 Against conjunctivism.....	111
PART TWO — GROUPS AND THE FAILURE OF INDIVIDUALISM ....	127
10 Groups and constitution .....	130
11 Simple facts about groups .....	149
12 The identity of groups .....	168
13 Kinds of groups .....	182
14 Group attitudes: patterns of grounding.....	198
15 Group action: more than member action .....	220
16 Group intention.....	240
17 Other theories I: social integrate models .....	255
18 Other theories II: status models .....	270
LOOKING AHEAD.....	283
Bibliography.....	287

## *Grounding and anchoring*

Before the interlude on tools and terminology, we were confronted with two different approaches to the social world: ontological individualism and the “Standard Model.” I described ontological individualism in the first two chapters and raised worries about it in the third. It is a widely held thesis, its content largely agreed on: it is a thesis about supervenience. That is, there can be no change in the social properties without a change in the individualistic properties. The “Standard Model of Social Ontology,” alternatively, is the view that social objects are projections of our attitudes or agreements onto the non-social world. Social entities, on this view, are performative and the product of collective intentions.

I suggested that these two views hinge on two different relations between people and the social world. The first view takes facts about people to be the *building blocks* of social facts. In the second view, facts about people’s attitudes *set up* constitutive rules or conventions, governing the social world. A mob is a paradigm of the first view, and a dollar bill is a paradigm of the second.

With more tools in hand, let us now get more specific about these relations, and how they fit together in an overall model of social facts. In the model I will put forward, all social facts involve both relations. Any given social fact has building blocks, and also metaphysical reasons for why that fact’s building blocks are what they are. This chapter explains the overall model and its parts.

### *What “constitutive rules” are after*

Consider again the Standard Model. Searle’s version of it, for instance, consists of two parts. There is the constitutive rule, having the form *X counts as Y in C*, and there are the facts about collective acceptance, which put the constitutive rules in place.

One of the problems I raised with Searle's view was that it was unclear about what sorts of social things it was supposed to give an account of. Searle characterizes his view as a theory of "institutional facts." But boundaries and money themselves are objects or kinds, not facts.

It turns out that facts are a good category for us to focus our attention on. But if we are talking about facts, we should talk about *facts*, not objects or kinds. As a working example, it makes sense to pick something simple — say, a fact about a particular dollar bill. Take the dollar bill in my pocket. Call it 'Billy'.<sup>1</sup> A nice example of a particular social fact is this: ***Billy is a dollar bill.***

With this particular fact in mind, consider the constitutive rule for dollars. Remember that Searle's proposal is:

(CR) Bills issued by the Bureau of Engraving and Printing count as dollars in the United States.

Let's not worry about whether Searle's rule gives the right conditions for a bill to be a dollar. It probably does not, since it is unclear whether that Bureau is really responsible for issuing currency, or whether it is just the organization that prints currency. But let's not press this point.

Instead, let us consider what Searle is trying to capture or accomplish with the constitutive rule, and assess whether his proposed formula actually does that. First off, we should note that his idea would have been much clearer if he had written the formula as a conditional — an if-then statement — rather than as what linguists call a "generic." One issue with the "generic" formulation is that the formula *X counts as Y in C* is meant to apply both to particular cases and to general cases. It is meant to be a formula for constitutive rules applying to one particular thing, such as a particular line of stones counting as a boundary. And it is meant to be a formula for all the bills issued by the Bureau of Engraving and Printing. So it is not clear whether 'X' is a singular term or a general term. But in any case, generics are notoriously difficult to interpret. They often hold only for some of the X's, not all of them. (For instance, the generic "Mosquitos carry malaria" is true, even though most mosquitos do not.) A universal conditional is much more

---

<sup>1</sup> Here I am glossing over a subtle issue — which object exactly does the name 'Billy' refer to? The dollar bill, or the piece of paper that materially constitutes the bill? I discuss material constitution in Part Two, and a precise formulation of constitutive rules will need clarity on this.

explicit, something like: *For all objects z, if z has property X, then z has property Y.*

That much is just a technical preference. But when we cast it in more explicit form, we start to see what Searle is trying to do with the “constitutive rule.” It is intended to give the conditions an object needs to satisfy in order for it to be an instance of the relevant social kind. That is, for an object to be a dollar bill, it needs to satisfy the antecedent conditions given in the “X-term.” If an object has the property *being issued by the Bureau of Engraving and Printing*, then that suffices for it to be a dollar bill.

The point may be even clearer with Hume’s example of a promise. In Hume’s theory, we have the convention *If an uttered phrase has the form ‘I promise to S’, that utterance is a promise.* This is a statement of the conditions that something needs to satisfy in order to be a promise. If something is an uttered phrase having that form, then it is a promise.

In both of the cases, we can see that the aim of this part of the theory is to give the conditions for something to have a social property. But there is still something missing. The aim of the “constitutive rule” is not just to give a set of *happenstance* conditions for something to be a dollar bill, or a promise. Instead, it is to give the conditions for *grounding* a fact about a dollar, or about a promise. The antecedent is not just an accidentally sufficient condition. It is the metaphysical *reason* that something is a dollar, or a promise. Constitutive rules tell us what grounds what.

Grounding is most straightforwardly understood as a relation between facts. And in investigating social metaphysics, we look for the reasons for a wide variety of social facts to be the case. This is what a constitutive rule should be telling us. Sometimes we set up grounding conditions for a *particular* fact. For instance, we set up grounding conditions for the existence of one particular boundary around a village. More typically, we set up general conditions for grounding some *kind* of social fact. If we consider particular facts like *Billy is a dollar*, or else *Joey is a dollar*, these both obtain because an object satisfies the appropriate grounding condition. The fact *Billy is a dollar* is grounded by the fact *Billy was issued by the Bureau of Engraving and Printing*. The fact *Joey is a dollar* is grounded by the fact *Joey was issued by the Bureau of Engraving and Printing*. But both of these fall under one constitutive rule.

## GROUNDING AND ANCHORING

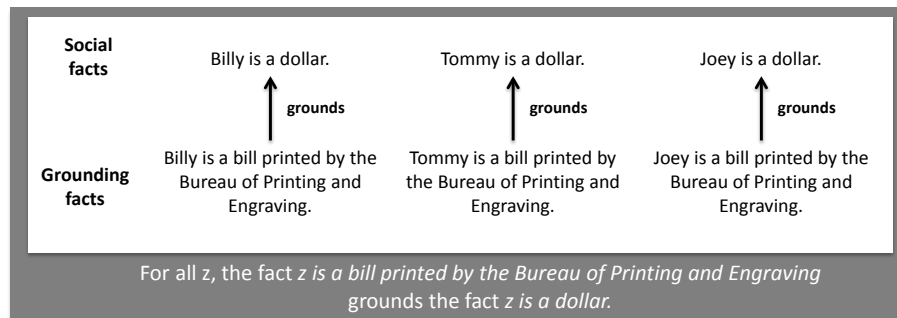
In short, a typical constitutive rule articulates the link between a set of grounding conditions X and a grounded fact of type Y:

For any z, the fact *z is X* grounds the fact *z is Y*.

**Grounding conditions**      **Grounded fact**

*Figure 6A Parts of a constitutive rule*

A constitutive rule is a principle that connects a set of grounding conditions to a particular social fact or a type of social fact. It articulates what the grounding conditions are for a social fact. This means that the constitutive rule is not among the grounding conditions for a social fact,<sup>2</sup> but instead describes how the social fact is grounded. Moreover, it expresses the grounding conditions across an entire set of situations, contexts, or worlds. We might depict the grounding of a range of different social facts with the following diagram:



*Figure 6B Grounding facts about dollars, in a context or world*

This figure depicts several facts about dollars being grounded. These are actual facts. Billy is the bill in my pocket, Tommy is the bill in the drawer, and Joey is the bill on the table. All three were issued by the Bureau of Engraving and Printing, hence all three are dollars. In this context, the various social facts are all grounded in accordance with a single principle. But the principle is not “in the picture,” alongside the particular instances of grounding. Rather, it is part of the “picture frame.” It is a principle that expresses the grounding conditions that have been set up.

In talking about these principles, I am shifting away from Searle’s term ‘constitutive rule’ altogether. As we will see, there are many different sorts of principles that give the grounding conditions for social facts. Many of them serve quite different purposes from the ones Searle discusses. The term

<sup>2</sup> I explain and defend this in detail in Chapter 9.

‘constitutive rule’ is so closely associated with Searle’s formula *X counts as Y in C*, that it would be very confusing to retain his term for this much more general notion. Also, the term ‘constitutive rule’ was never a particularly appropriate one. Like the Holy Roman Empire, which was neither holy, nor Roman, nor an empire, constitutive rules are neither constitutive nor are they rules. Instead, I will call these general principles “frame principles.”

### *Frames and frame principles*

Figure 6B only displays the grounding of *actual* facts. But the grounding conditions for *x is a dollar* do not only apply to actual dollars. They also apply to other possibilities. The Bureau of Engraving and Printing, for instance, might have issued more dollars than it actually did. Or it might have issued fewer. These kinds of possibilities are exactly the sorts of things that we want to model in the social sciences. If we want to work out the consequences of different policies, we consider what would happen in other possibilities — for instance, what chain of events a different dollar-printing policy would unleash. Is it a good policy choice to fire up the printing presses, and crank out the bills? In examining that possibility, we apply the same frame principle to a non-actual situation.

More generally, social kinds can be instantiated across the universe of different situations, contexts, or worlds. When we set up the conditions for some social fact to obtain, we set up the grounding conditions for that universe. We set up the conditions for it to obtain even in situations, contexts, or worlds where we do not exist.

This means we have to generalize from a single situation, context, or world to a universe of possible worlds. A *frame* is a structure containing this universe, i.e., a set of possible worlds in which the grounding conditions for social facts are fixed in a particular way.<sup>3</sup> Each of these possible worlds may have different grounding facts from one another. (For instance, in a different possible world, it is not the piece of paper Billy that was printed by the Bureau of Engraving and Printing, but instead a different piece of paper, Mary.) Different possible worlds, therefore, may have a variety of different

---

<sup>3</sup> Frames can be modeled using a multi-frame or multi-dimensional modal logic. For background on multi-modal logics, see Blackburn et al. 2006; Marx and Venema 1997; van Benthem 1996. For an application to social ontology, see Grossi 2007; Grossi et al. 2006.

## GROUNDING AND ANCHORING

social facts that are thereby grounded. Across the entire frame, however, the grounding conditions for social facts are the same.<sup>4</sup>

A frame principle gives the grounding conditions not just for the actual world, but for all possibilities. Figure 6C depicts an entire frame, all governed by one frame principle:

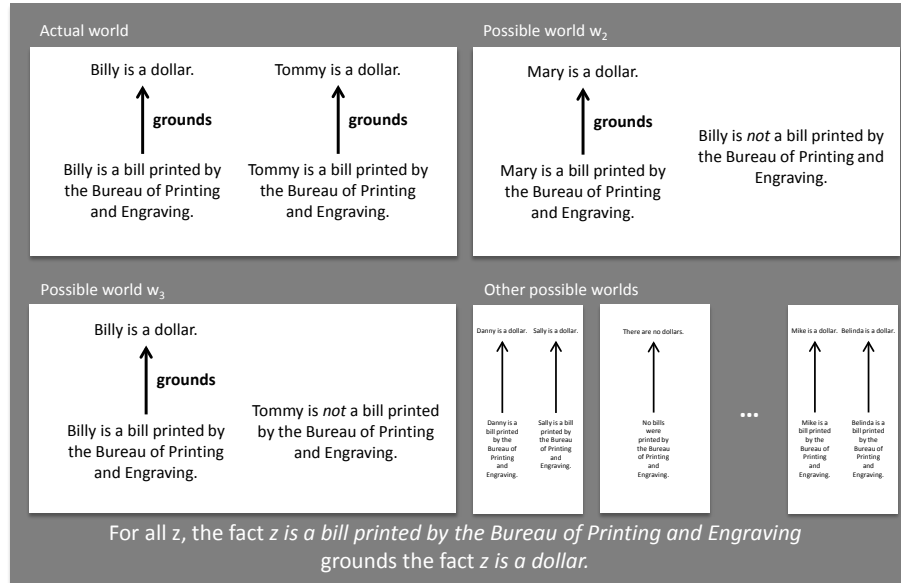


Figure 6C An entire frame

In this diagram, several different possible worlds are depicted. In different worlds, different grounding facts obtain. In some worlds, both Billy and Tommy are issued by the Bureau of Engraving and Printing. In some worlds, different objects are. These different facts about bill issuance ground different facts about dollars. The same frame principle, however, governs all these possibilities. The kind *dollar* has one fixed set of grounding conditions, which can be satisfied by different facts in different possible worlds. These grounding conditions are given by one frame principle.

This much — frames, frame principles, grounding conditions — is already the start of a framework for thinking about social metaphysics in general. It immediately raises a number of topics to investigate. What are the grounding conditions for a given social fact? What *kinds* of social facts are there, and how do we express the various grounding conditions for them? However, I should note that we are far from finished with refining the form

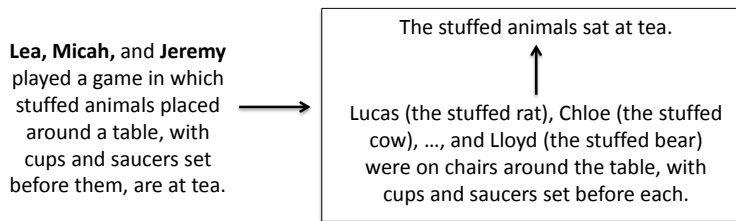
<sup>4</sup> If the “contingency” view of grounding is correct, this need not always be so. But for our purposes, I will take all the frame principles to be necessary in the frame.



of frame principles. Several issues need to be addressed in order for the form to make sense. But we will be able to make quicker headway on these in the context of the specific case of groups, which is the topic of Part Two of the book. Instead, I now turn to the other part of the model — why are *these* the grounding conditions for *x is a dollar*, rather than *those*? What puts frame principles in place?

### *Anchoring*

Recall the diagram we drew for the children’s tea party in Chapter 4:



*Figure 6D The role of people in the “tea party”*

In this figure, we can now discern a grounding relation on the right hand side. In the box on the right, two facts are listed:

(6.3) *Lucas, Chloe, ..., and Lloyd were on chairs around the table, with cups and saucers set before each.*

(6.4) *The stuffed animals sat at tea.*

The children have set up a game in which facts about the arrangement of the stuffed animals ground facts about their being “at tea.” In setting up the game, Lea, Micah, and Jeremy have not only set up the parameters for the *actual* moves the animals make. They set up the grounding conditions for different possibilities. For example: *If the plastic triangle were placed in front of the stuffed rat instead of in front of the stuffed bear, then the rat would be “eating a scone” and the bear would be “eating nothing.”* The right-hand box could therefore be elaborated with a diagram analogous to figure 6B, depicting the rules of the game as the frame principles, operative across the whole range of possibilities. None of this, however, yet includes Lea, Micah and Jeremy. They are not part of the facts that ground the “tea party” facts. Rather, they *set up* the rules: the frame principles. It is because of facts about the children that the frame principles are in place. The rightward arrow in figure 6D represents a different relation than grounding.

It is a general feature of kinds — not just social kinds like dollars and play tea parties — that something needs to *glue* them together. Even a natural kind like gold may need a bit of “glue,” to set it up as a natural kind. Some philosophers hold, for instance, that laws of nature play some role in acting as this glue. The idea is that all it takes for an object to be a sample of gold is to be composed of atoms with a particular atomic number. However, what unifies a chemical kind (like gold) into a natural kind is that the laws of nature make the chemical behave in certain regular ways. Without laws gluing the chemical kind together, it would not be a natural kind at all.<sup>5</sup>

The Standard Model gives us a standard answer about how the social kinds are “glued.” They are glued by our ongoing attitudes toward those kinds. Searle and Hume give us different versions of this theory. Recall that on Searle’s theory, they are glued together by a very particular fact: the fact *The members of the community collectively accept the constitutive rule for the kind*. On Hume’s theory, they are glued together by the beliefs and practices that put in place a convention about that kind. There are surely other possibilities as well. But all of these theories are theories about a particular relation. They are theories about the “putting in place” relation that holds between a set of facts and the grounding conditions for a kind — in other words, between a set of facts and a frame principle. This is the relation I call *anchoring*.

‘Anchoring’ — like ‘grounding,’ ‘causing,’ and many other terms in metaphysics — is difficult to define explicitly. The way we fix the reference of a term in metaphysics is not very different from the way we fix a term in the sciences. We do it by describing it, and pointing to it. Philosophers have not yet, for instance, worked out an adequate analysis of grounding. Some of its basic characteristics are still unknown. Does the grounding relation only hold between a more fundamental fact and a less fundamental fact? Or is fundamentality irrelevant to grounding? These questions are still being investigated, but that does not imply that they do not have answers. The term ‘causation’ is similar. We have scads of examples of events that stand in causal relations to one another, but there is basic disagreement about the characteristics of causation. Still, that does not prevent the term ‘causation’ from picking out a particular metaphysical relation, even though we do not

---

<sup>5</sup> This is only one view among many of natural kinds.

quite know what it is. Just as we do not need to have a perfect theory of temperature, lightning, or magnetism, in order to refer to and theorize about them, neither do we need a perfect theory in order to start theorizing about causation, grounding, and anchoring. (Of course we cannot need a perfect theory of something in order to start theorizing about it. If we did, we would never be able to start theorizing about anything.) Instead, we pick these things out with examples, partial theories, and metaphors.

In the case of anchoring, theories stretch back at least to Locke's account of nominal essences, if not back to Aristotle's agreement-based theories of language and of law. But the distinction has not been clearly made between the grounding facts, and the facts that put in place the grounding conditions.

It is natural to wonder whether there really is a difference between anchors and grounds. Why aren't anchors just more grounds for a given social fact? In the examples I have given, I have tried to present an intuitive case for this. But the question remains a good one: I will address it head on in Chapter 9. At the end of the day, however, what matters is whether the model works. If anchoring (or grounding, for that matter) turns out to be very useful, that provides evidence that we are in the vicinity of something illuminating. So it is as important to apply it, and see how it works in particular cases, as it is to argue for it abstractly.

I will take anchoring to be a relation between a set of facts and a frame principle.<sup>6</sup> For a set of facts to anchor a frame principle is for those facts to be the metaphysical reason that the frame principle is the case. In this sense, anchoring is very much like grounding. For a set of facts  $g_1, \dots, g_m$  to ground fact  $f$  is for  $g_1, \dots, g_m$  to be the metaphysical reason that  $f$  obtains in a world. For a set of facts  $a_1, \dots, a_n$  to anchor a frame principle  $R$  is for  $a_1, \dots, a_n$  to be the metaphysical reason that  $R$  holds for the frame. Both are "metaphysical reason" relations. But they do different work, and stand between different sorts of relata.

---

<sup>6</sup> It may be more intuitive to understand anchoring as a function from sets of facts to frame principles, or else as a function from worlds (usually at times) to frames as a whole.

*Putting the picture together*

Anchoring and grounding fit together into a single model of social ontology. To illustrate, let us use Searle’s theory of dollars as an example once again. According to that theory, the fact *We collectively accept CR* anchors constitutive rule *CR*. That constitutive rule expresses the grounding conditions for facts about dollars. It is then particular facts about pieces of paper (i.e. *these bills were issued by the Bureau of Engraving and Printing*) that ground the social facts (i.e. *these bills are dollars*). Depicting this involves adding just one element to the diagram: the anchor. The frame principle does not stand alone, without metaphysical explanation. Rather, a distinct set of facts anchors it.

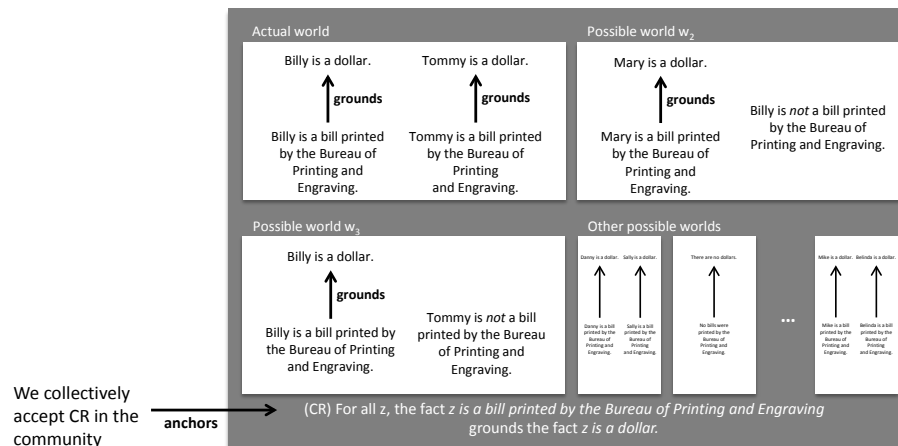


Figure 6E A final depiction of Searle’s theory of money

Figure 6E shows the fact about collective acceptance at the lower left, anchoring the frame principle. The frame principle applies to all the possibilities in the frame. Whenever the grounding conditions are satisfied by some object, that object has the social property *being a dollar*.

This diagram is a useful one. But there is a lot going on, so it is easy to lose the point. To depict the overall framework and avoid confusion, then, I will usually leave out the other worlds (e.g.  $w_2$ ,  $w_3$ , and the other worlds in figure 6E). But even when I simplify 6E it should be understood that a frame contains not just one world, but a universe of possible worlds, all anchored in the same way. That is, all conforming to the same frame principles.

A more general depiction of the framework is shown in figure 6F. In that diagram, it can be seen that there are two different places — highlighted

in bold — where facts about individual people (and other facts as well) can play a role in “making the social world.”

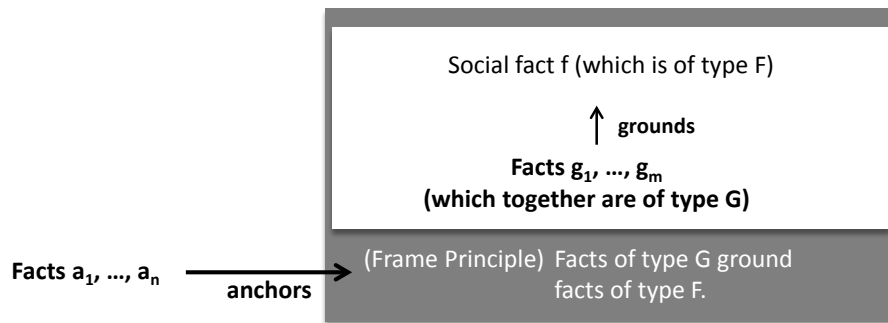


Figure 6F Generic anchoring and grounding diagram

In this figure, the **anchoring facts**  $a_1, \dots, a_n$  are the facts that set up or put in place the grounding conditions for social facts of type F. They are the facts, for instance, that set up the grounding conditions for *being a dollar*, *being a university*, *being kosher*, *being a murderer*, *being a war criminal*, etc. Facts about people may be involved in anchoring. For instance, the anchors may be the collective intentions of people in the community.

The **grounding facts**  $g_1, \dots, g_m$  are the facts that ground a social fact  $f$ . A grounded social fact in our frame might be one about a particular object, such as *Billy is a dollar bill*, *Tufts is a university* or *Assad is a war criminal*. Or it might be a general fact, such as *There are dollars*, *I work at some university*, or *The International Criminal Court rarely punishes war criminals*. Any of these facts is grounded by a set of facts in the actual world. The same grounding conditions also apply to social facts in other possible worlds. For instance, there is a possible world in which Mother Teresa is a war criminal. In the actual world, she obviously does not satisfy the conditions for being a war criminal. But in some remote possible world, she committed such-and-such heinous acts, and hence satisfies those conditions we have anchored for *being a war criminal*. Facts about people may be involved in grounding as well (or instead). For instance, Mother Teresa’s acts may be the grounds for the social fact *Mother Teresa is a saint* or *Mother Teresa is a sinner*.

This fills out some general structure of the theories, of which Searle’s and Hume’s are examples. But there is still a loose thread. All the discussion so far has been focused on what I called the “Type 2 examples,” ones in which the role of people in making social facts is that they put in place the

grounding conditions. What about the relation between the mob and the mobsters? Here, the people are not putting in place the conditions for being a mob. The people *constitute* the mob.

### *Type 1 examples*

The bold type in figure 6F highlights two different roles individual people can play in “making” the social world. Social facts can be grounded by facts about people, and frame principles can be anchored by facts about people. With this clarification, the Type 1 examples — such as the mob, the flow of commuters, and the Jewish people — are simple to interpret. For these examples, facts about individual people play an exhaustive role, or at least a very significant role, in grounding certain social facts about them.

Recall the discussion of grounding from the last chapter. Facts (5.3) and (5.4) are two facts that stand in the partial grounding relation:

(5.3) ***Bob, Jane, Tim, Joe, Linda, ... and Max ran down Howe Street.***

(5.4) ***The mob ran down Howe Street.***

As I pointed out in the last chapter, (5.3) partially grounds (5.4), but does not quite fully ground it. For that, we need other facts, such as that Bob, Jane, and the others are clustered reasonably tightly together.

To work out what facts fully ground (5.4), one approach is to think more generally about the grounding conditions of a variety of kinds of facts. What, for instance, are the grounding conditions for a fact of the form *x constitutes a mob*? What are the grounding conditions for a fact of the form *x ran down Howe Street*? This is not a trivial project, even for so simple a fact as (5.4).

But even before we embark on such a project — and that will have to wait until Part Two — we can already see that these facts conform to the framework above. To ask about the grounding conditions for facts of the form *x constitutes a mob* is precisely to ask about the frame principles for facts of that form. In other words, a fact like ***The mob ran down Howe Street*** fits into the grounding and anchoring framework, just where any other social fact, such as ***Billy is a dollar***, does. The only difference is that a fact like ***The mob ran down Howe Street*** is grounded by different sorts of facts than those that ground ***Billy is a dollar***.

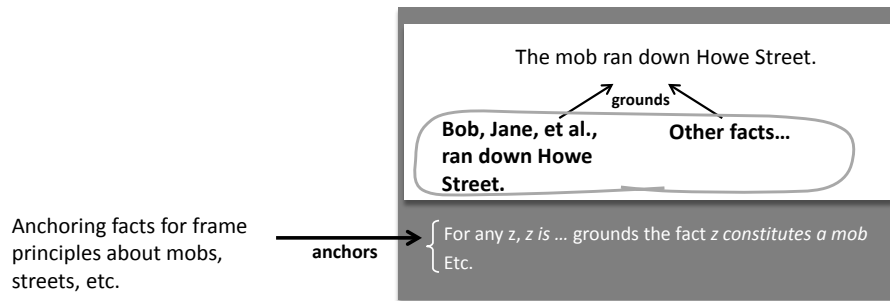


Figure 6G A Type 1 fact in the anchoring and grounding framework

In this figure, a circle is drawn around the facts that ground (5.4). Interestingly, this immediately raises a question that is scarcely noticed. What sorts of facts anchor the frame principles for facts about mobs? What is the “glue” holding together the social kind *mob*? Even if the “Standard Model” is correct for the case of dollars, or for the case of promises, it is not obvious that it is correct for the kind *mob*.

### *The grounding inquiry and the anchoring inquiry*

For each of the two relations — grounding and anchoring — there is a separate project in social ontology. The grounding inquiry tends to precede the anchoring inquiry. It is the project of working out the frame principles in a given frame, usually our current frame, as it is actually anchored. The anchoring inquiry, on the other hand, examines how our frame principles are anchored, how we can anchor new frame principles, and how we can change frames.

In each inquiry, there are both specific and general questions to ask. For grounding: How is one particular social fact actually grounded? What are the different ways that particular fact might be grounded? And how are social facts of some *kind* actually grounded? What are the grounding conditions, in general, for facts of that kind? What are the grounding conditions for facts *in general*? Is a comprehensive set of the individualistic facts that obtain enough to ground all the social facts that obtain?

Similarly for anchoring. How is one particular frame principle in our frame anchored? How else might the same frame principle be anchored? What about different *kinds* of frame principles, or frame principles in general? Are there different *schemas* for anchoring frame principles? Are all the anchoring facts individualistic?

## GROUNDING AND ANCHORING

The anchoring and grounding model is meant to raise and clarify these questions. The overall structure of the model is not committed to any theory of anchoring or grounding. The structure of the model alone, however, already clarifies the difference between two different kinds of individualism about social ontology. There is individualism about grounding, which we already know by the name “ontological individualism.” And there is individualism about anchoring. In Chapters 8 and 9, I turn to those individualisms, both to clarify them and to elaborate on the tension between them. I also return to the distinction between anchoring and grounding, and show that an advocate of either individualism should be an even stronger proponent of the distinction between the two than the skeptic should be. First, though, I will say more about frame principles, both to avoid any misunderstanding of this key element of the model, and to exhibit a case in which even this sketch of a framework pays off.



## *Two kinds of individualism*

In Chapter 3, I raised an alarm about ontological individualism. Ontological individualism has long been regarded as obviously true. But it may be no more defensible than Virchow’s extreme version of cell theory.

All along, however, there have been two traditions about the nature of the social world. The ontological individualism tradition of Watkins, Lukes, Kincaid, and Pettit is one. The “Standard Model” tradition of Hume, Hart, and Searle is another. In the last few chapters, I have assembled a new model for making sense of both, unifying them in a single framework.

What does this mean for individualism about the social world? How should this change our understanding of the original thesis of ontological individualism? And how should we construe individualism in the “Standard Model” tradition? With the model and tools in hand, we can resolve these. There are two distinct kinds of individualism, two different kinds of claims about how social facts are made by facts about individuals. These correspond to two different locations in the model, as shown in figure 8A:

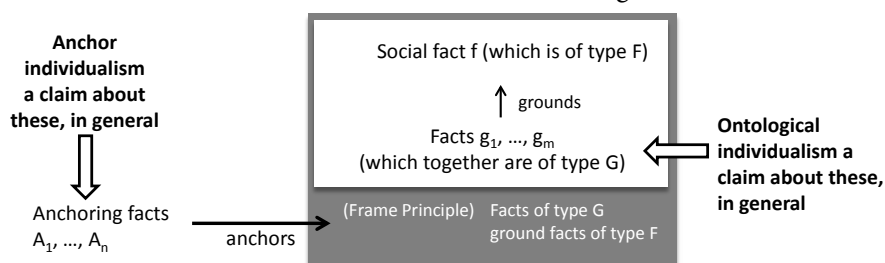


Figure 8A *Two kinds of individualism*

What I will call “anchor individualism” is a claim about how frame principles can be anchored. Ontological individualism, in contrast, is best understood as a claim about how social facts can be grounded. I will begin with a comment on the sets of social and individualistic facts, and then turn to a brief sketch of anchor individualism. Most of this chapter, however, is devoted to revisiting ontological individualism. Moving beyond the “supervenience” interpretation, I introduce two complementary notions: *determination* and *dependence*. Both of these can be analyzed in terms of

grounding, and with them, we can develop a more up-to-date understanding of ontological individualism. Supervenience turns out to be a useful (albeit imperfect) tool for evaluating whether ontological individualism is true. But it is not the best way to analyze ontological individualism itself.

I will defer one important issue to the next chapter: that anchors are not included among the grounds of a social fact, and correspondingly that ontological individualism is not about anchoring.

### *Individualistic facts*

To put forward any version of individualism, a key task is to identify which facts are the social facts, and which facts are the individualistic ones. This task is unavoidable for a proponent of individualism. The individualist needs to have a clear sense of these. Otherwise, it is pointless for her to assert that the social facts are exhaustively “built out of” the individualistic ones.

I am not confident this can be done: debate about these categories has been going on for decades. For this reason, I want to avoid evaluating the dozens of conceptions of “individualistic” and “social.”<sup>1</sup> Instead, I will *grant* to the individualist that we can take each proposition and sort it into one of three mutually exclusive categories: the social, the individualistic, and the ones that are neither social nor individualistic. As I discussed in Chapter 5, the propositions corresponding to the social facts need to be understood more broadly than they often are. If we can figure out which properties and objects are the social ones, the social propositions are plausibly the ones that have any social object or social property as a constituent. For instance, propositions like *The mob is cold* and *John is rich* are each social propositions. The individualistic propositions are those that have individual people or individualistic properties as constituents, but not social ones. *John is cold* is an individualistic proposition. Some propositions are neither social nor individualistic, such as *The sun is 93 million miles from the earth*.

The social facts, then, are those corresponding to the social propositions, and the individualistic facts are those corresponding to the individualistic propositions. I will use the letter S to denote the set of possible social facts, the letter N for the set of possible individualistic facts, and the

---

<sup>1</sup> I do discuss this in Epstein 2009 and Epstein 2014.

letter Z for the set of possible facts that are neither social nor individualistic.

*What is anchor individualism?*

Anchor individualism is a thesis about how frame principles are anchored. It is a thesis about anchoring in general: all frame principles, across all frames, are exhaustively anchored by facts about individual people. Searle’s collective acceptance theory is an example. Whenever a constitutive rule is anchored in a community, it is anchored by the “we-attitudes” of individuals in the community. Searle makes few commitments to what sorts of facts ground social facts. But his “collective acceptance” theory restricts anchors to a very limited set of mental states of individual people.<sup>2</sup>

If Searle is right, that means that every actual frame principle is anchored in the same way. And that every *possible* frame principle is also anchored in the same way: always by collective acceptance of the principle itself.<sup>3</sup> To illustrate, Table 8a lists the frame principles and anchors for two different frames. The “Frame 1” column lists frame principles for *x is a dollar* and *x is a first degree murderer*. And the “Frame 2” column gives a different set of frame principles for these kinds of social facts. Each also lists the respective set of anchors, according to Searle’s theory.

Table 8a

Multiple frames		
	Frame 1	Frame 2
<b>Frame principles</b>	<ul style="list-style-type: none"> <li>• (D1) If x is a bill issued by the Bureau of Engraving and Printing, that grounds the fact that x is a dollar.</li> <li>• (M1) If x kills with deliberately premeditated malice aforethought, that grounds the fact that x is a first degree murderer.</li> </ul>	<ul style="list-style-type: none"> <li>• (D2) If x is a bill issued by the Treasury Department, that grounds the fact that x is a dollar.</li> <li>• (M2) If x kills deliberately but without malice, that grounds the fact that x is a first degree murderer.</li> </ul>
<b>Anchors</b>	<ul style="list-style-type: none"> <li>• We collectively accept D1</li> <li>• We collectively accept M1</li> </ul>	<ul style="list-style-type: none"> <li>• We collectively accept D2</li> <li>• We collectively accept M2</li> </ul>

<sup>2</sup> In Searle’s view, a “we-attitude” is simply a different kind of internal mental state of an individual than an “I-attitude” is. (Searle 2010, pp. 42-50)

<sup>3</sup> Searle has slightly modified this in Searle 2010, with his discussion of collective recognition.

***Other versions of anchor individualism***

Searle's theory is not the only version of anchor individualism. All the versions of the Standard Model of Social Ontology are also varieties. There may also be versions of anchor individualism that are not representatives of the Standard Model at all.

One way that Searle's theory is particularly restrictive is in its limited set of anchors. Only attitudes toward frame principles — not more general attitudes, not regularities, not practices, nor anything else — anchor frame principles themselves. The other theories I have mentioned allow for more inclusive anchoring facts. On Hart's theory of practices, the anchors of a rule R are not only attitudes towards R, but also behaviors conforming to R. In other words, the anchors involve actions, not just attitudes. Hume's theory is slightly more liberal still. It involves attitudes and behaviors as well, only the attitudes do not need to be attitudes towards the convention. Instead, the attitudes are about the sorts of things that other members of the community know and want.

Of the three, only Searle's version holds that frame principles are anchored by psychological facts about individual people. Despite this, in all the accounts, the facts anchoring frame principles are facts about individual people. The theorist who denies anchor individualism will take anchors to include facts that are *not* facts about individual people.

***Anchors for each frame principle, or just for the whole set of them?***

Searle's theory is also particularly restrictive in that it proposes that any given constitutive rule have a *specific* anchor. Each rule has one corresponding set of anchoring facts, and in Searle's theory, the corresponding set is easy to identify: *Constitutive rule x holds in a community c if and only if every member of c has the we-attitude: We accept x.*<sup>4</sup>

This sort of correspondence, however, is more than the anchor individualist needs. We could construct a less reductive thesis of anchor individualism, using the same kind of generality that I described in connection with ontological individualism. As I discussed in Chapter 2, ontological individualism says only that the social facts are exhaustively

---

<sup>4</sup> Searle's theory is also narrow in its formulation of frame principles, as *X counts as Y in C*. But this is a matter of what he takes to be anchored, not the facts that do the anchoring, which is what anchor individualism pertains to.

determined by individualistic facts *as a whole*. It is silent on whether or not a reductive account of the grounds of social facts is possible. To be ontological individualists, we do not need every social property to be connected to a specific set of individual level properties. Similarly, a theorist who argues that anchors in general must be individualistic does not need to specify the *particular* anchors for any given frame principle. Instead, he may just make a claim about the relation of a whole set of anchors to a whole set of frame principles.

A theory of convention, for instance, may take there to be a diverse set of facts that together anchor a variety of conventions. It may not regard conventions as being anchored one by one. It may be, for instance, that we have a huge number of conventions about driving cars, and that all of these conventions are jointly anchored by a huge set of interconnected behaviors and beliefs about driving. Just as ontological individualism is the generic thesis that social facts are exhaustively built out of facts about individuals, anchor individualism can be the generic thesis that the grounding conditions for social facts are exhaustively anchored by facts about individuals. That is, it is a claim about a relation holding between a whole set of “social-level principles” and a whole set of “individual-level facts.”

In short, one could be an anchor individualist without having a specific theory of how individual frame principles are anchored. One merely needs to be committed to the view that frame principles in general are anchored by facts about individuals.

### ***The anchoring inquiry***

Theories about how we anchor the social world arguably stretch back to Plato and Aristotle, both of whom discussed the role of agreement in forming language and laws.<sup>5</sup> Despite this long tradition, there are still surprisingly few theories of how and why certain facts anchor certain kinds of rules or principles. These theories have been stunted for a number of reasons: We often fail to distinguish anchors from grounds, so the inquiries have become muddled; theorists have been unwilling to look deeply into the nuances of individual cases; the relation between convention and collective intentions has remained murky; and most importantly, theorists have

---

<sup>5</sup> See, for instance, *Cratylus* 384d and *De Interp.* 16b19.

insisted that there can be only one schema by which anchoring works.

Even a quick look at the last chapter shows that this is unlikely to be right. Hart's theory of practices, for instance, is only meant to apply to the rule of recognition. A theory of anchoring needs to confront the frame principles for many kinds of social facts. Frame principles for facts of the form *x is a murderer* or *x is a felon* may be anchored in the way that primary rules are. Those for facts of the form *x is a U.S. law* may be anchored in the way secondary rules are. Those for facts of the form *x is money* or *x is a corporation* may be anchored still differently.

Altogether, the anchoring inquiry is wide open terrain, both for anchor individualists and for their opponents. In my view, the best way to assess anchor individualism is to consider anchoring more generally. And that is a topic for a bigger book than this one.

As I pointed out, however, the "grounding inquiry" is more pertinent to modeling than is the "anchoring inquiry." This means that, at least for the practice of social science, the failure of ontological individualism has a more immediate impact than the failure of anchor individualism does.

How then, after all this, should we understand ontological individualism? It is almost always analyzed in terms of supervenience, but that is not the best way to go. In the next sections, I develop a new analysis. Ontological individualism is better understood as a thesis about grounding. Or more specifically, as a thesis about dependence, which I will define in terms of grounding.

I will then return to supervenience, to explain two points. First is the relation between a dependence claim and a supervenience claim. Second, and much more important, is the common mistake in applying supervenience to facts.

### *Making sense of determination and dependence*

What does it mean to say that social facts *depend on* facts about individuals, or that facts about individuals *determine* the social facts? Dependence and determination differ somewhat. Both can be understood in terms of the grounding relation. Both are claims about how various possible facts can be grounded. First I will consider what it means to say that a fact G determines a fact F, and what it means to say that a fact F depends on a fact G.

Subsequently I will turn to *sets* of facts.

The words ‘determines’ and ‘depends on’ are often used loosely. When we say that G determines F, we sometimes mean a cause-and-effect relation: G causes F to be the case. Other times, we mean a grounding relation: G is a full metaphysical reason that F obtains. Here I will use it with one precise and stronger meaning.

(8.1) *G determines F*: it is necessary that if G is the case, G grounds F. You will recognize this as the form of many of the frame principles I have discussed above, with an added explicit “it is necessary that.” For instance, suppose that G is the fact ***Whitey killed Bucky with deliberately premeditated malice aforethought***, and F is the fact ***Whitey is a first degree murderer***. Then, to say that G determines F is to say *It is necessary that if Whitey killed Bucky with deliberately premeditated malice aforethought, that fact grounds the fact that Whitey is a first degree murderer.*

In short, the idea of *G determining F* is that anywhere, in any possible world, whenever you have G, that is enough for it to fully ground F. This leaves open the possibility that F can be grounded in other ways. If you have G, then G fully grounds F, but you could have F without its being grounded by G. (Recall that *G grounds F* is the same as *G fully grounds F*.)<sup>6</sup>

Sometimes people use ‘depends on’ interchangeably with ‘determines’. This is not quite right. There is a subtle but significant difference between the two.

One thing that makes the notions of determination and dependence confusing is that they take their relata in a different order. We say, for instance, that facts about my brain determine facts about my thoughts, and that facts about my thoughts depend on facts about my brain. To avoid the confusion, I will keep using the letters F and G in the same way I did above: G is the grounding fact, and F is the fact that is grounded. Again, we can take G to be a fact like ***Whitey killed Bucky with deliberately premeditated malice aforethought***, and F to be a fact like ***Whitey is a first degree murderer***.

---

<sup>6</sup> I mentioned in Chapter 5 that I side with the “contingency” rather than the “necessitarian” view of grounding. That detail matters if we are to make sense of my definition of determination. The problem is that on the competing view, my definition is redundant — determination is implied by grounding. It would not matter terribly if it were redundant, but I want to be sure to avoid confusion. Since I do not assume that grounding implies necessitation, the definition of determination is not redundant.

The intuitive difference between determination and dependence is this. To say that G determines F is to say that G always makes F obtain. More specifically: G being the case guarantees that F is the case, and G is a complete metaphysical reason for F. To say that F *depends* on G is to say that F needs G, in order for F to obtain. More specifically: F guarantees that G is the case, and that G is at least part of the metaphysical explanation for F. Thus there are two differences between determination and dependence. One is that dependence has F as the antecedent of its conditional. The other difference is that dependence need not involve the full grounding relation, but only involves partial grounding:

(8.2) *F depends on G*: it is necessary that if F is the case, G partially grounds F.

If F depends on G, then anywhere, in any possible world, if F obtains, then it is partially grounded by G. But it leaves open the possibility that G can obtain without grounding F.<sup>7</sup>

Although I am reluctant to burden us with too many relations, I should introduce one more: the full dependence relation. That is the same as dependence, but with full grounding instead of partial grounding. This relation will be useful in a moment, when we start thinking about how sets of facts can depend on other sets of facts. So the definition of full dependence is this:

(8.3) *F fully depends on G*: it is necessary that if F is the case, G grounds F.

Why isn't this the intuitive notion of dependence, and why instead do I say that dependence just involves partial grounding? Because plain dependence just involves some reason, one of the reasons, for the fact obtaining. We say that *Whitey is a first degree murderer* depends on the fact *Whitey killed somebody*. That is true, even though having killed somebody is not itself enough to fully ground being a first degree murderer. F depends on G just in case it needs G. G may not be the only thing F needs. F fully depends on G just in case it is the only thing F needs.

Thus there is a sort of imperfect symmetry between determination

---

<sup>7</sup> Interestingly, in the literature on grounding in metaphysics, there is an active discussion of dependence, but determination is somewhat overlooked. Rosen 2010, for instance, errs in his account of "real definition," because he uses a formula like (8.3) and overlooks the need for a determination clause.



and dependence. The determination relation between *Whitey killed Bucky with deliberately premeditated malice aforethought* and *Whitey is a first degree murderer* is that whenever you have the killing, that entails that the murderer fact also obtains. The dependence relation is that whenever you have the murderer fact, that entails that it is partially grounded by the killing. Notice that in this example, determination holds but dependence does not. *Whitey killed Bucky with deliberately premeditated malice aforethought* determines *Whitey is a first degree murderer*. But *Whitey is a first degree murderer* does not depend on *Whitey killed Bucky with deliberately premeditated malice aforethought*. After all, suppose *Whitey hadn't killed Bucky*. He still killed lots of other people with deliberately premeditated malice aforethought. So he would have been a first degree murderer without that fact being even partially grounded by the killing of Bucky.

Here is another example to illustrate determination and dependence. Consider the following three facts:

(8.4) *I married Sarah on July 13, 2008, both of us are alive, and we have not divorced.*

(8.5) *I married someone at some point in the past.*

(8.6) *I am married.*

(8.4) determines (8.6): it is necessary that if I married Sarah in the past, and we are both alive and undivorced, then those facts fully ground the fact that I am married. But (8.6) does not depend on (8.4). I could have been married to someone else, so that fact could obtain without being even partially grounded by (8.4).

On the other hand, (8.6) does depend on (8.5): it must be that if I am married, that fact is partially grounded by the fact that I married somebody in the past. But (8.5) does not determine (8.6): even if I married someone in the past, I might have divorced in the interim.

### *Defining ontological individualism*

Ontological individualism is not just a claim about one social fact and one individualistic fact. It is a claim about the grounding of all the social facts. Up to this point, I have spoken of it as a claim that social facts are exhaustively determined by facts about individuals. But ontological individualism is best

understood as a claim about dependence — about the dependence of all social facts on some set of individualistic facts. The ontological individualist says that if we have some set of social facts that obtain, then the grounds for those facts — the full metaphysical reason for their obtaining — is some set of individualistic facts.

It will come as no surprise that there are various ways to cash this out. One natural way is to look at all the social facts in all the possible worlds. For each social fact, if that social fact obtains in a world, then also obtaining in that world is a set of individualistic facts that grounds that social fact.<sup>8</sup> That is:

(OI1) For any possible world  $w$ , and any social fact  $f$  at  $w$ , there is some subset  $X$  of  $N$  (where  $N$  is the set of possible individualistic facts), such that  $X$  grounds  $f$  at  $w$ .

This is a dependence claim. All social facts in all worlds depend on some set or other of individualistic facts in that world.

This is not the only way to fill in the details. Here is one reservation we could have about this definition of ontological individualism: it takes each social fact to have its own individualistic grounds. This seems hard to deny, if one is to be an ontological individualist. But we could come up with a weaker interpretation, which does not require this and still seems to qualify as ontological individualism. That is, if we take the set of social facts in any world, that whole set taken together must be fully grounded by some set of individualistic facts in that world. To put it more precisely, we need to refer to one huge fact we can call the “total social fact” for a world. Take all the social facts that obtain in a world — that is, the subset of  $S$  all of whose members obtain in the world. Then let the “total social fact” in that world be the single fact that all the facts in that subset obtain. Then ontological individualism can be understood as the following:

(OI2) For any possible world  $w$ , if  $F$  is the total social fact at  $w$ , then there is some subset  $X$  of  $N$ , such that  $X$  grounds  $F$  at  $w$ .

We can also make other changes to account for different ways we might take the individualistic facts to relate to the social facts.<sup>9</sup> All these details show that

---

<sup>8</sup> In the next chapter, I discuss the restriction to our frame.

<sup>9</sup> For instance, we can change ‘grounds’ to ‘determines’, to ensure that individualistic facts ground the social facts in a uniform way across all possibilities.

ontological individualism is a family of theses, not just one. We can precisely define a variety of versions, using the grounding relation. These definitions capture its intuitive force, and also capture various nuances that the ontological individualist may or may not want to commit to.

These definitions also show that if we want to confront ontological individualism, either to support it or attack it, we do it via the grounding inquiry. What are the grounding conditions for social facts? What are, in other words, their frame principles?

And they show how we can distinguish ontological individualism from its traditional analysis as a supervenience thesis. Supervenience has its uses, but it also has significant limitations.

### *Supervenience*

Ontological individualism is a claim about what grounds what, rather than a claim about what supervenes on what. Supervenience should be regarded as a family of diagnostic tools. The supervenience of one set of properties on another set of properties provides strong — but not infallible — evidence that the facts involving the first set metaphysically depend (in one way or another) on the facts involving the other set. But it only provides that evidence if it is correctly set up and interpreted.

I will consider only the one best candidate for formulating ontological individualism: global supervenience.<sup>10</sup> Global supervenience, like most forms, is a relation between sets of properties: a set A of properties and a set B of properties. Intuitively, to say that *A globally supervenes on B* is to say that if we fix all of the B-properties in the whole world, then that suffices to fix all the A-properties in the world as well. To say that the *chemical properties* globally supervene on the *properties of microphysics* is to say that if all the microphysical properties are fixed, everywhere in the world, then there is no more work to do in fixing the chemical properties. They are already fixed. To say that the *social properties* globally supervene on the *individualistic properties*, then, is to say that if all the individualistic properties are fixed, everywhere in the world, then there is no more work to

---

<sup>10</sup> There are, in fact, several versions of global supervenience, but their differences are not important for our purposes; cf. Epstein 2009.

do in fixing the social properties.

But that is just an intuitive characterization. More specifically, supervenience claims are always about how distributions of properties covary, or change in sync with one another, across different possible worlds. Here is a common formulation of the global supervenience of a set A of properties on a set B of properties:

A-properties globally supervene on B-properties if and only if for any worlds  $w_1$  and  $w_2$ , if  $w_1$  and  $w_2$  have exactly the same worldwide pattern of distribution of B-properties, then they have exactly the same world-wide pattern of distribution of A-properties.<sup>11</sup>

Applying this to social and individualistic properties, if two worlds have different distributions of social properties, then they also must have different distributions of individualistic properties.<sup>12</sup> Variations in the social properties entail variations in the individualistic properties.

### ***A diagnostic tool***

Global supervenience can be a good diagnostic tool for assessing whether a thesis like OI1 is true. Suppose OI1 were false. Then there would be some social fact, in some world, that was not fully grounded by any set of individualistic facts in that world. The most natural way for that to happen is if there is something *else* that makes that social fact obtain, other than the individualistic facts. So if we change that other thing, the social fact will change, without having changed the individualistic facts. Global supervenience would likely fail.

Conversely, suppose global supervenience fails. That is, suppose there is a difference between the distributions of social properties between two worlds without there being a difference in the distributions of individualistic properties. How can there be such a difference? The most natural way is if there is at least some social fact, in some world, that is not fully grounded by any set of individualistic facts. Which means OI1 would be false.

But the connection between OI1 and global supervenience is not perfect. One can succeed without the other succeeding, and one can fail

---

<sup>11</sup> McLaughlin and Bennett 2005. See also Kim 1984.

<sup>12</sup> The different versions of global supervenience correspond to different ways of interpreting “worldwide patterns of distribution.” See Sider 2006, Sider 1999, Bennett 2004a, and Shagrir 2002.

without the other failing. As I say, global supervenience is good but not infallible evidence. Many philosophers have noticed that the co-variation of social with individualistic facts can never be enough to guarantee that the individualistic facts are the *metaphysical reason* for the social facts obtaining. We can have whatever version of supervenience we want, and it still does not give us grounding.<sup>13</sup> Supervenience is not enough to capture dependence, and we should not expect it to be. The force of a thesis that neuters dualism cannot be just that social facts co-vary in the right way, with respect to individualistic ones. It has to be that they are metaphysically *built* out of the individualistic ones. To take a supervenience relation to be the same thing as a dependence relation is tantamount to confusing the ultrasound with the pregnancy.

### *A practical shortcoming*

I want to stress a different shortcoming of supervenience — more practical than principled, but still serious. Supervenience is most commonly understood as a relation between sets of properties, not sets of facts. It is not that supervenience cannot be understood as a relation between sets of facts. The problem, though, is that this conversion is often done wrong. People often misunderstand the relation between a set of properties and a set of facts. This leads them to mistakenly conclude that a set of facts supervenes on another set of facts when it actually does not.

Consider, for example, the following passage from Jaegwon Kim's seminal paper on supervenience. Kim explains how to turn a claim about the supervenience of facts into a claim about the supervenience of properties:

A singular fact, I take it, is something of the form *a is F*, where *a* is an individual and *F* a property; and to say that the fact that *a is F* is a fact of kind *P* (say, a psychological fact) amounts, arguably, to saying that *F* is a property of kind *P* (say, a psychological property). It follows then that for two worlds to be identical in regard to facts of kind *P* is for the following to hold: for any property *F* of kind *P* and any *x*, *x* has *F* in one world if and only if *x* has *F* in the other.<sup>14</sup>

To apply Kim's statement to social facts and social properties: To say that the fact *a is F* is a social fact amounts to saying that *F* is a social property. And it follows that for two worlds to be identical in regard to their social facts is for

---

<sup>13</sup> See van Cleve 1990, McLaughlin 1995, and Rosen 2010, pp. 113-14

<sup>14</sup> Kim 1984, p. 169

the following to hold: for any social property  $F$  and any  $x$ ,  $x$  has  $F$  in one world if and only if  $x$  has  $F$  in the other.

This is a mistake. Consider the fact *The sun is warm*. One might think that this is an example of a “solar fact,” but that is not so, according to Kim’s definition. It is a “temperature fact,” since the property  $F$  is a temperature property. Likewise, the fact *The freshman class at Tufts is warm* is a temperature fact, on Kim’s definition, but not a social fact. In other words, the way Kim translates fact supervenience into property supervenience is to drop the part that is not a property.

As I pointed out in introducing social facts, it is not correct that a fact of the form  $a$  is  $F$  is a social fact just in case  $F$  is a social property. It is also social fact if  $a$  is a social object. Consider two worlds, one in which the freshman class at Tufts is cold, and the other, in which the freshman class at Tufts is warm. These worlds differ in their social facts. But Kim’s definition would imply that they do not.

Because supervenience is most perspicuously understood as a relation between property sets, it leads to mistakes when we consider sets of facts. In particular, it leads people to underestimate what social properties need to be included. If supervenience is to address the relation between social and individualistic facts, we need to do one of two things: (1) come up with a form of supervenience that explicitly relates sets of facts, or (2) expand the set of properties so that we are sure that *all* the social facts are taken care of. There are several ways we can appropriately expand the set of social properties. For instance, we can include in the set of social properties all the “identity properties” for all the social objects. That is, properties of the form *being an a*. (For example, the property *being the freshman class at Tufts*.) A different option is to turn the social facts into properties: for every social fact  $f$ , we could include the property *being such that f obtains*.

This problem is not unsolvable, but it is often overlooked. People take some limited set of properties, apply them to a limited set of objects, and conclude that supervenience works. Supervenience has been misapplied by so many people for so long that I think it is fair to criticize the tool as misleading.

Again, this leads us back to preferring talk about facts, and grounding and determination and dependence relations among sets of facts.

## FOUNDATIONS: OLD AND NEW

Supervenience can be an effective diagnostic tool when it is applied properly. But it is a tricky piece of machinery. The current approach tends to leave out literally half of every social fact. This mistake, in my view, is a key reason that 30 years have gone by since supervenience was first applied to ontological individualism without people realizing that ontological individualism is flawed.

## Bibliography

- Agassi, J. 1975. "Institutional Individualism." *The British Journal of Sociology* 26 (2):144-55.
- Alexander, Jeffrey C., Bernhard Giesen, Richard Münch, and Neil J. Smelser, eds. 1987. *The Micro-Macro Link*. Berkeley: University of California Press.
- Archer, Margaret S. 2003. *Structure, Agency and the Internal Conversation*. Cambridge: Cambridge University Press.
- Ariew, André, Robert Cummins, and Mark Perlman. 2002. *Functions: New Essays in the Philosophy of Psychology and Biology*. Oxford: Oxford University Press.
- Arrow, Kenneth J., and G. Debreu. 1954. "The Existence of an Equilibrium for a Competitive Economy." *Econometrica* 22 (3):265-90.
- Audi, Paul. 2011. "Grounding: Toward a Theory of the in-Virtue-of Relation." *The Journal of Philosophy* 109 (12):685-711.
- Axtell, Robert. [2006] 2014. "Agent-Based Computing in Economics." The Institute for New Economic Thinking at the Oxford Martin School, Oxford, 21 January 2014.
- Baker, Lynne Rudder. 1997. "Why Constitution Is Not Identity." *Journal of Philosophy* 94 (12):599-621.
- . 1999. "Unity without Identity: A New Look at Material Constitution." In *New Directions in Philosophy: Midwest Studies in Philosophy*, edited by Peter A. French and Howard K. Wettstein, 144-165. Malden: Blackwell.
- . 2000. *Persons and Bodies: A Constitution View*. Cambridge: Cambridge University Press.
- Banerjee, Abhijit V., Esther Duflo, Rachel Glennerster, and Cynthia Kinnan. [2009] 2013. "The Miracle of Microfinance?: Evidence from a Randomized Evaluation." Working Paper No. 13-09.
- Barro, Robert. 1973. "The Control of Politicians: An Economic Model." *Public Choice* 14:19-42.
- Becker, Gary S., and George J. Stigler. 1974. "Law Enforcement, Malfeasance, and Compensation of Enforcers." *The Journal of Legal Studies* 3 (1):1-18.



## BIBLIOGRAPHY

- Beed, Clive, and Owen Kane. 1991. "What Is the Critique of the Mathematization of Economics?" *Kyklos* 44 (4):581-612.
- Bender, Paul. 1962. "The Retroactive Effect of an Overruling Constitutional Decision: Mapp V. Ohio." *University of Pennsylvania Law Review* 110 (5):650-683.
- Bennett, Karen. 2004a. "Global Supervenience and Dependence." *Philosophy and Phenomenological Research* 68 (3):510-529.
- . 2004b. "Spatio-Temporal Coincidence and the Grounding Problem." *Philosophical Studies* 118 (3):339-371.
- . 2009. "Composition, Colocation, and Metaontology." In *Metametaphysics: New Essays on the Foundations of Ontology*, edited by David John Chalmers, David Manley and Ryan Wasserman. Oxford: Oxford University Press.
- . 2011. "Construction Area: No Hard Hat Required." *Philosophical Studies* 154 (1):79-104.
- Bernanke, Ben. [2004] 2012. "The Great Moderation." In *The Taylor Rule and the Transformation of Monetary Policy*, edited by Evan Koenig, Robert Leeson and George Kahn, 145-162. Stanford: Hoover Press.
- Besley, Timothy. 2006. *Principled Agents? The Political Economy of Good Government*. Oxford: Oxford University Press.
- Besley, Timothy, and Michael Smart. 2002. "Does Tax Competition Raise Voter Welfare?" *Discussion Paper Series Centre for Economic Policy Research* No. 3131.
- Bhargava, Rajeev. 1992. *Individualism in Social Science*. Oxford: Clarendon Press.
- Blackburn, Patrick, Johan van Benthem, and Frank Wolter. 2006. *Handbook of Modal Logic*. Vol. 3. Amsterdam: Elsevier Science.
- Blanchard, Olivier. 2011. IMF Macro and Growth Policies in the Wake of the Crisis, Washington, DC, 7-8 March 2011.
- Blanchard, Olivier J. 2008. "The State of Macro." *National Bureau of Economic Research Working Paper* No. 14259.
- Blanchard, Olivier J., Giovanni Dell'Ariccia, and Paolo Mauro. 2010. "Rethinking Macroeconomic Policy." *Journal of Money, Credit, and Banking* 42 (Supplement):199-215.
- Block, Ned. [1978] 1980. "Troubles with Functionalism." In *Readings in Philosophy of Psychology*, edited by Ned Block, 268-305. Cambridge: Harvard University Press.
- Bratman, Michael. 1987. *Intention, Plans, and Practical Reason*. Stanford: CSLI Publications.
- . 1993. "Shared Intention." *Ethics* 104 (1):97-113.

## BIBLIOGRAPHY

- . 1997. "I Intend That We J." In *Contemporary Action Theory, Vol. 2: Social Action*, edited by Raimo Tuomela and Ghita Holmstrom-Hintikka, 49-63. Dordrecht: Kluwer.
- . 2014. *Shared Agency*. Oxford: Oxford University Press.
- Buller, David J. 1999. *Function, Selection, and Design*. Albany: SUNY Press.
- Burke, Michael B. 1994. "Preserving the Principle of One Object to a Place." *Philosophy and Phenomenological Research* 54 (3):591-624.
- Callender, Craig. 1999. "Reducing Thermodynamics to Statistical Mechanics: The Case of Entropy." *The Journal of Philosophy* 96 (7):348-373.
- Calvert, Randall. 1986. *Models of Imperfect Information in Politics*. Chur: Harwood Academic Publishers.
- Canetti, Elias. 1962. *Crowds and Power*. New York: Viking Press.
- Cassidy, John. 2010. "After the Blowup." *New Yorker*, 11 January 2010.
- Colander, David. 1996. *Beyond Microfoundations: Post Walrasian Economics*. Cambridge: Cambridge University Press.
- Coleman, James S. 1990. *Foundations of Social Theory*. Cambridge: Belknap Press.
- Coleman, Jules, and Brian Leiter. 1996. "Legal Positivism." In *A Companion to Philosophy of Law and Legal Theory*, edited by Dennis Patterson, 241-250. Oxford: Blackwell.
- Correia, Fabrice. 2005. *Existential Dependence and Cognate Notions*. Munich: Philosophia Verlag.
- Currie, Gregory. 1984. "Individualism and Global Supervenience." *British Journal for the Philosophy of Science* 35 (4):345-58.
- Dancy, Jonathan. 2004. *Ethics without Principles*. Oxford: Clarendon.
- . 2009. "Action, Content, and Inference." In *Wittgenstein and Analytic Philosophy: Essays for P.M.S. Hacker*, edited by John Hyman and Hans-Johann Glock, 278-298. Oxford: Oxford University Press.
- Davidson, Donald. 1980. "Mental Events." *Readings in Philosophy of Psychology* 1:107-119.
- de Tocqueville, Alexis. [1889] 2003. *Democracy in America*. Edited by Bruce Frohnen. Washington: Regenery Publishing.
- Debreu, Gerard. 1991. "The Mathematization of Economic Theory." *The American Economic Review* 81 (1):1-7.
- deRosset, Louis. 2010. "Getting Priority Straight." *Philosophical Studies* 149 (1):73-97.
- Doepke, Frederick. 1982. "Spatially Coinciding Objects." *Ratio* 24:45-60.
- . 1996. *The Kinds of Things: A Theory of Personal Identity Based on Transcendental Argument*. Chicago: Open Court Publishing Company.

## BIBLIOGRAPHY

- Dorr, Cian, and Gideon Rosen. 2002. "Composition as a Fiction." In *The Blackwell Guide to Metaphysics*, edited by Richard Gale, 151-174. Oxford: Blackwell.
- Drysdale, John James 1874. *The Protoplasmic Theory of Life*. London: Bailliere, Tindall, and Cox.
- Duflo, Esther. 2006. "Field Experiments in Development Economics." *Econometric Society Monographs* 42:322-348.
- Durkheim, Emile. [1895] 1982. *The Rules of Sociological Method*. London: Macmillan.
- Dworkin, Ronald. 1978. *Taking Rights Seriously*. Cambridge: Harvard University Press.
- . 1986. *Law's Empire*. Cambridge: Belknap Press.
- Easterbrook, Frank H. 1983. "Statutes' Domains." *The University of Chicago Law Review* 50 (2):533.
- . 1994. "Text, History, and Structure in Statutory Interpretation." *Harvard Journal of Law and Public Policy* 17:61.
- Effingham, Nikk. 2010. "The Metaphysics of Groups." *Philosophical Studies* 149 (2):251-267.
- Einheuser, Iris. 2006. "Counterconventional Conditionals." *Philosophical Studies* 127 (3):459-482.
- Epstein, Brian. 2008. "When Local Models Fail." *Philosophy of the Social Sciences* 38 (1):3-24.
- . 2009. "Ontological Individualism Reconsidered." *Synthese* 166 (1):187-213.
- . 2011. "Agent-Based Models and the Fallacies of Individualism." In *Models, Simulations, and Representations*, edited by Paul Humphreys and Cyrille Imbert, 115-144. New York: Routledge.
- . 2014. "What Is Individualism in Social Ontology? Ontological Individualism Vs. Anchor Individualism." In *Rethinking the Individualism/Holism Debate: Essays in the Philosophy of Social Science*, edited by Finn Collin and Julie Zahle. Dordrecht: Springer.
- . 2015. "How Many Kinds of Glue Hold the Social World Together?" In *Perspectives on Social Ontology and Social Cognition*, edited by Mattia Galloti and John Michael. Dordrecht: Springer.
- Epstein, Brian, and Patrick Forber. 2012. "The Perils of Tweaking: How to Use Macrodata to Set Parameters in Complex Simulation Models." *Synthese* 190 (2):203-218.
- Epstein, Joshua M. [2005] 2006. "Remarks on the Foundations of Agent-Based Generative Social Science." *Handbooks in Economics* 2:1585-1604.

## BIBLIOGRAPHY

- Farmer, J Doyne, and Duncan Foley. 2009. "The Economy Needs Agent-Based Modelling." *Nature* 460 (7256):685-686.
- Fearon, James. 1999. "Electoral Accountability and the Control of Politicians: Selecting Good Types Versus Sanctioning Poor Performance." In *Democracy, Accountability and Representation*, edited by Bernard Manin, Adam Przeworski and Susan Stokes, 55-97. Cambridge: Cambridge University Press.
- Ferejohn, John. 1986. "Incumbent Performance and Electoral Control." *Public Choice* 50 (1-3):5-25.
- Fine, Kit. 2003. "The Non-Identity of a Material Thing and Its Matter." *Mind* 112 (446):195-234.
- . 2012. "Guide to Ground." In *Metaphysical Grounding: Understanding the Structure of Reality*, edited by Fabrice Correia and Benjamin Schnieder, 37-80. Cambridge: Cambridge University Press.
- Fletcher, John. 1837. *Rudiments of Physiology: In Three Parts*. Edinburgh: J. Carfrae & Son.
- Fodor, Jerry A. 1974. "Special Sciences (Or: The Disunity of Science as a Working Hypothesis)." *Synthese* 28 (2):97-115.
- Forbes, G. 1987. "Is There a Problem of Persistence?" *Proceedings of the Aristotelian Society* 61 (Supplement):137-155.
- Forel, Auguste. 1928. *The Social World of the Ants Compared with That of Man*. London: G.P. Putnam's Sons.
- Garfinkel, Alan. 1981. *Forms of Explanation*. New Haven: Yale University Press.
- Garfinkel, Harold. 1967. *Studies in Ethnomethodology*. Englewood Cliffs: Prentice-Hall.
- Geertz, Clifford. 1973. *The Interpretation of Cultures: Selected Essays*. New York: Basic Books.
- Gellner, Ernest. 1973. *Cause and Meaning in the Social Sciences*. London: Routledge & Kegan Paul.
- Gibbard, Allan. 1975. "Contingent Identity." *Journal of Philosophical Logic* 4 (2):187-221.
- Giddens, Anthony. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge: Polity Press.
- Gilbert, Margaret. 1989. *On Social Facts*. Princeton: Princeton University Press.
- . 1990. "Walking Together: A Paradigmatic Social Phenomenon." *Midwest Studies in Philosophy* 15:1-14.
- . 1996. *Living Together: Rationality, Sociality, and Obligation*. Lanham: Rowman & Littlefield.
- . 2014. *Joint Commitment*. Oxford: Oxford University Press.

## BIBLIOGRAPHY

- Goethe, J.W. 1962. *Italian Journey*. Translated by W.H. Auden and Elizabeth Mayer. London: Penguin.
- Goldstein, Leon J. 1958. "The Two Theses of Methodological Individualism." *British Journal for the Philosophy of Science* 9 (33):1-11.
- Green, Leslie. 1996. "The Concept of Law Revisited." *Michigan Law Review* 94 (6):1687-1717.
- Greenawalt, Kent. 1986. "The Rule of Recognition and the Constitution." *Michigan Law Review* 85:621-671.
- Greenberg, Mark. 2004. "How Facts Make Law." *Legal Theory* 10 (3):158-98.
- Grossi, Davide. 2007. "Designing Invisible Handcuffs: Formal Investigations in Institutions and Organizations for Multi-Agent Systems." *SIKS Dissertation Series* No. 16.
- Grossi, Davide, John-Jules Ch. Meyer, and Frank Dignum. 2006. "Classificatory Aspects of Counts-As: An Analysis in Modal Logic." *Journal of Logic and Computation* 16 (5):613-643.
- Guala, Francesco. 2007. "The Philosophy of Social Science: Metaphysical and Empirical." *Philosophy Compass* 2 (6):954-980.
- Guala, Francesco, and Daniel Steel, eds. 2011. *The Philosophy of Social Science Reader*. London: Routledge.
- Hale, Bob. 1987. *Abstract Objects*. Oxford: Basil Blackwell.
- Hamilton, William D. 1971. "Geometry for the Selfish Herd." *Journal of Theoretical Biology* 31 (2):295-311.
- Hart, H.L.A. 1961. *The Concept of Law*. Oxford: Clarendon Press.
- Haslanger, Sally. 1995. "Ontology and Social Construction." *Philosophical Topics* 23 (2):95-125.
- Hawley, Katherine. 2006. "Principles of Composition and Criteria of Identity." *Australasian Journal of Philosophy* 84 (4):481 – 493.
- Hawthorne, John. 2006. "Plenitude, Convention, and Ontology." In *Metaphysical Essays*, 53-69. Oxford: Oxford University Press.
- Heims, Steve Joshua. [1991] 1993. *Constructing a Social Science for Postwar America: The Cybernetics Group, 1946-1953*. Cambridge: MIT Press.
- Heller, Mark. 1990. *The Ontology of Physical Objects*. Cambridge: Cambridge University Press.
- Hindriks, Frank. 2008. "The Status Account of Corporate Agents." In *Concepts of Sharedness: Essays on Collective Intentionality*, edited by Hans Bernd Schmid, K. Schulte-Ostermann and N. Psarros, 119-44. Frankfurt: Ontos.
- . 2009. "Constitutive Rules, Language, and Ontology." *Erkenntnis* 71 (2):253-275.
- . 2012. "But Where Is the University?" *Dialectica* 66 (1):93-113.

## BIBLIOGRAPHY

- . 2013. "The Location Problem in Social Ontology." *Synthese* 190 (3):413-437.
- Hirsch, Eli. 2002. "Against Revisionary Ontology." *Philosophical Topics* 30 (1):103-127.
- Hooker, C. 1981. "Towards a General Theory of Reduction." *Dialogue* 20:496-529.
- Hoover, Kevin. 1995. "Is Macroeconomics for Real?" *The Monist* 78 (3):235-257.
- . 2001a. *Causality in Macroeconomics*. Cambridge: Cambridge University Press.
- . 2001b. *The Methodology of Empirical Macroeconomics*. Cambridge: Cambridge University Press.
- . 2009. "Microfoundations and the Ontology of Macroeconomics." In *Oxford Handbook of Philosophy of Economics*, edited by Harold Kincaid and Don Ross, 386-409. Oxford: Oxford University Press.
- Howe, Jeff. 2008. *Crowdsourcing: Why the Power of the Crowd Is Driving the Future of Business*. New York: Random House.
- Hume, David. [1740] 1978. *A Treatise of Human Nature*. Edited by L. A. Selby-Bigge and P. H. Nidditch. 2nd ed. New York: Oxford University Press.
- . [1777] 1975. *Enquiries Concerning Human Understanding and Concerning the Principles of Morals*. edited by L. A. Selby-Bigge. Oxford: Clarendon Press.
- Jarvie, I.C. 1998. "Situational Logic and Its Reception." *Philosophy of the Social Sciences* 28:365-80.
- Johnston, Mark. 1992. "Constitution Is Not Identity." *Mind* 101:89-105.
- Keynes, John Maynard. 1936. *The General Theory of Employment, Interest and Money*. New York: Harcourt, Brace.
- Kim, Jaegwon. 1982. "Psychophysical Supervenience." *Philosophical Studies* 60 (2):51-70.
- . 1984. "Concepts of Supervenience." *Philosophy and Phenomenological Research* 45:153-76.
- . 1987. "'Strong' and 'Global' Supervenience Revisited." *Philosophy and Phenomenological Research* 45:153-176.
- . 1989. "The Myth of Nonreductive Materialism." *Proceedings and Addresses of the American Philosophical Association* 63:31-47.
- Kincaid, Harold. 1986. "Reduction, Explanation and Individualism." In *Readings in the Philosophy of Social Science*, edited by M. Martin and L.C. McIntyre, 497-515. Cambridge: MIT Press.

## BIBLIOGRAPHY

- . 1997. *Individualism and the Unity of Science*. Lanham: Rowman and Littlefield.
- . 1998. "Supervenience." In *The Handbook of Economic Methodology*, edited by John B. Davis, D. Wade Hands and Uskali Mäki, 487-88. Cheltenham: Edward Elgar.
- Kirman, Alan. [2009] 2010. "The Economic Crisis Is a Crisis for Economic Theory." *CESifo Economic Studies* 56 (4):498-535.
- Klein, L.R., and A.S. Goldberger. 1955. *An Econometric Model of the United States, 1929-1952*. Amsterdam: North-Holland.
- Koslicki, Kathrin. 2004. "Constitution and Similarity." *Philosophical Studies* 117:327-364.
- . 2012. "Varieties of Ontological Dependence." In *Metaphysical Grounding: Understanding the Structure of Reality*, edited by Fabrice Correia and Benjamin Schnieder, 186-213. Cambridge: Cambridge University Press.
- Kratzer, Angelika. 2012. *Modals and Conditionals: New and Revised Perspectives*. Oxford: Oxford University Press.
- Kripke, Saul. [1972] 1980. *Naming and Necessity*. Cambridge: Harvard University Press.
- Krugman, Paul. 2009. "How Did Economists Get It So Wrong?" *New York Times Magazine*, 2 September 2009.
- Kuhn, Thomas S. 1962. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.
- Kydland, Finn E., and Edward C. Prescott. 1982. "Time to Build and Aggregate Fluctuations." *Econometrica* 50 (6):1345-1370.
- Langton, Rae, and David K. Lewis. 1998. "Defining 'Intrinsic'." *Philosophy and Phenomenological Research* 58:333-45.
- Lattimore, Richmond. 1951. *The Iliad of Homer*. Chicago: University of Chicago Press.
- Le Bon, Gustave. 1895. *The Crowd: A Study of the Popular Mind*. New York: Macmillan.
- Leiter, Brian. 2003. "Beyond the Hart/Dworkin Debate: The Methodology Problem in Jurisprudence." *American Journal of Jurisprudence* 48:17-51.
- Leuenberger, Stephan. 2014. "Grounding and Necessity." *Inquiry* 57 (2):151-174.
- Lewis, David K. 1969. *Convention: A Philosophical Study*. Cambridge, MA: Harvard University Press.
- . 1973. *Counterfactuals*. Oxford: Blackwell.

## BIBLIOGRAPHY

- . 1976. "Survival and Identity." In *The Identities of Persons*, edited by Amelie Oksenberg Rorty, 17-40. Berkeley: University of California Press.
- . 1983. "Extrinsic Properties." *Philosophical Studies* 44:197-200.
- . 1986. *On the Plurality of Worlds*. Cambridge: Cambridge University Press.
- List, Christian, and Philip Pettit. 2006. "Group Agency and Supervenience." *Southern Journal of Philosophy* 44:85-105.
- . 2011. *Group Agency: The Possibility, Design, and Status of Corporate Agents*. Oxford: Oxford University Press.
- Little, Daniel. 1991. *Varieties of Social Explanation*. Boulder: Westview Press.
- Lo, Andrew. 2012. "Reading About the Financial Crisis: A Twenty-One-Book Review." *Journal of Economic Literature* 50 (1):151-78.
- Lo, Andrew, and Mark Mueller. 2010. "Warning: Physics Envy May Be Hazardous to Your Wealth!" *Journal of Investment Management* 8 (2):13-63.
- Lowe, E. J. 1989. *Kinds of Being: A Study of Individuation, Identity, and the Logic of Sortal Terms*. Oxford: Basil Blackwell.
- . 1991. "One-Level Criteria of Identity and Two-Level Criteria of Identity." *Analysis* 51:192-94.
- . 1995. "Coinciding Objects: In Defence of the 'Standard Account'." *Analysis* 55 (3):171-178.
- . 1997. "Objects and Criteria of Identity." In *A Companion to the Philosophy of Language*, edited by Bob Hale and Crispin Wright, 613-633. Oxford: Blackwell.
- . 1998. *The Possibility of Metaphysics: Substance, Identity, and Time*. Oxford: Oxford University Press.
- . 2009. *More Kinds of Being*. Oxford: Wiley-Blackwell.
- Lowe, E. J., and Harold W. Noonan. 1988. "Substance, Identity and Time." *Proceedings of the Aristotelian Society* 62 (Supplement):61-100.
- Lucas, Robert E. 1972. "Expectations and the Neutrality of Money." *Journal of Economic Theory* 4 (2):103-124.
- . 1977. "Understanding Business Cycles." *Carnegie-Rochester Conference Series on Public Policy* 5:7-29.
- Lukes, Steven. 1968. "Methodological Individualism Reconsidered." *British Journal of Sociology* 19:119-29.
- Macdonald, Graham, and Philip Pettit. 1981. *Semantics and Social Science*. London: Routledge & Kegan Paul.
- Mandelbaum, Maurice. 1955. "Societal Facts." *British Journal of Sociology* 6:305-17.



## BIBLIOGRAPHY

- Mandeville, Bernard. [1714] 1934. *The Fable of the Bees; or, Private Vices, Public Benefits*. London: Wishart & Co.
- Manning, John F. 2005. "Textualism and Legislative Intent." *Virginia Law Review* 91:419-450.
- Marmor, Andrei. 2010. *Philosophy of Law*. Princeton: Princeton University Press.
- . 2012. "The Nature of Law: An Introduction." In *The Routledge Companion to the Philosophy of Law*, edited by Andrei Marmor, 3-15. New York: Routledge.
- Marx, Karl. 1867. *Capital, Volume I*. Harmondsworth: Penguin.
- Marx, Karl, and Friedrich Engels. [1975] 1998. *Collected Works Vol. 37*. London: Lawrence & Wishart.
- Marx, Maarten, and Yde Venema. 1997. *Multi-Dimensional Modal Logic*. Dordrecht: Kluwer Academic Publishers.
- May, Larry. 1992. "On Social Facts by Margaret Gilbert." *Ethics* 102 (4):853-856.
- Mayr, Ernst. 1982. *The Growth of Biological Thought: Diversity, Evolution, and Inheritance*. Cambridge: Belknap Press.
- McLaughlin, B.P. 1995. "Varieties of Supervenience." In *Supervenience: New Essays*, edited by E. Savellos and U. Yalcin, 16-59. Cambridge: Cambridge University Press.
- McLaughlin, Brian. 1984. "Perception, Causation, and Supervenience." *Midwest Studies in Philosophy* 9 (1):569-592.
- McLaughlin, Brian, and Karen Bennett. 2005. "Supervenience." *Stanford Encyclopedia of Philosophy*. Accessed 29 May 2009.  
<http://plato.stanford.edu/archives/win2011/entries/supervenience/>.
- Mellor, D.H. 1982. "The Reduction of Society." *Philosophy* 57:51-75.
- Merricks, Trenton. 2001. *Objects and Persons*. Oxford: Oxford University Press.
- Mill, John Stuart. [1843-72] 1974. *A System of Logic. Ratiocinative and Inductive*. Vol. VII-VIII, *Collected Works*. Toronto: University of Toronto Press.
- Mills, C. Wright. 1959. *The Sociological Imagination*. New York: Oxford University Press.
- Nagel, Ernest. 1961. *The Structure of Science: Problems in the Logic of Scientific Explanation*. London: Routledge & Kegan Paul.
- Nash, John F. 1950. "The Bargaining Problem." *Econometrica* 18 (2):155-162.
- Neale, Stephen. 2001. *Facing Facts*. New York: Oxford University Press.
- Nickles, Thomas. 1973. "Two Concepts of Intertheoretic Reduction." *The Journal of Philosophy* 70 (7):181-201.

## BIBLIOGRAPHY

- Noonan, Harold. 1993. "Constitution Is Identity." *Mind* 102:133-46.
- North, Michael, and Charles Macal. 2007. *Managing Business Complexity: Discovering Strategic Solutions with Agent-Based Modeling and Simulation*. New York: Oxford University Press.
- Nøttestad, Leif, and Bjørn Erik Axelsen. 1999. "Herring Schooling Manoeuvres in Response to Killer Whale Attacks." *Canadian Journal of Zoology* 77 (10):1540-1546.
- Oderberg, D.S. 1996. "Coincidence under a Sortal." *Philosophical Review* 105:145-71.
- Oz, Amos. 2013. *Between Friends*. Translated by Sondra Silverston. New York: Houghton Mifflin Harcourt.
- Parsons, Talcott. 1951. *The Social System*. Glencoe: Free Press.
- . 1954. *Essays in Sociological Theory*. Glencoe: Free Press.
- Paul, L. A. 2002. "Logical Parts." *Noûs* 36 (4):578–596.
- . 2010. "The Puzzles of Material Constitution." *Philosophy Compass* 5 (7):579-590.
- Paul, Sarah K. 2013. "The Conclusion of Practical Reasoning: The Shadow between Idea and Act." *Canadian Journal of Philosophy* 43 (3):287-302.
- Peacocke, Christopher. 2005. "Joint Attention: Its Nature, Reflexivity, and Relation to Common Knowledge." In *Joint Attention: Communication and Other Minds*, edited by Naomi Eilan, Christoph Hoerl, Teresa McCormack and Johannes Roessler, 298-324. New York: Oxford University Press.
- Pettit, Philip. 1993. *The Common Mind*. New York: Oxford University Press.
- . 2003. "Groups with Minds of Their Own." In *Socializing Metaphysics*, edited by Frederick Schmitt, 167-194. Lanham: Rowman and Littlefield.
- Pitcher, T.J., and J.K. Parrish. 1993. "Functions of Shoaling Behavior in Teleosts." In *The Behaviour of Teleost Fishes*, edited by T.J. Pitcher, 364-439. London: Croom Helm.
- Plato. 1969. *Republic*. Translated by Paul Shorey. Edited by Paul Shorey. Vol. 2. Cambridge: Harvard University Press.
- Popper, Karl. 1945. *The Open Society and Its Enemies*. London: Routledge & Kegan Paul.
- . [1957] 2002. *The Poverty of Historicism*. London: Routledge.
- Portner, Paul. 2009. *Modality*. Oxford: Oxford University Press.
- Prakash, S.B., and J.C. Yoo. 2003. "The Origins of Judicial Review." *University of Chicago Law Review* 887-982.

## BIBLIOGRAPHY

- Pufendorf, Samuel. [1673] 2007. *On the Duty of Man and Citizen According to Natural Law*. Cambridge: Cambridge University Press.
- Putnam, Hilary. 1967. "Psychological Predicates." In *Art, Mind, and Religion*, edited by W. Capitan and D.D. Merrill, 37-48. Pittsburgh: University of Pittsburgh Press.
- . 1969. "On Properties." In *Essays in Honor of Carl G. Hempel*, 235-254. Dordrecht: D. Reidel.
- Quine, W. V. 1960. *Word and Object*. Cambridge: MIT Press.
- . 1981. *Theories and Things*. Cambridge: Harvard University Press.
- Raz, Joseph. 1975. *Practical Reason and Norms*. Princeton: Princeton University Press.
- Rea, Michael C. 2000. "Constitution and Kind Membership." *Philosophical Studies* 97 (2):169-193.
- Richard, Mark. 1990. *Propositional Attitudes*. Cambridge: Cambridge University Press.
- Ritchie, Katherine. 2013. "What Are Groups?" *Philosophical Studies* 166:257-272.
- Robins, Michael. 2002. "Joint Commitment and Circularity." In *Social Facts and Collective Intentionality*, edited by Georg Meggle, 299-321. Frankfurt: Hansel-Hohenhausen.
- Robinson, Denis. 1982. "Re-Identifying Matter." *Philosophical Review* 81:317-342.
- Romer, Paul. 2011. "The Dynamics of Rules." Macro and Growth Policies in the Wake of the Crisis, International Monetary Fund, 8 March 2011.
- Rose-Ackerman, Susan. 1978. *Corruption: A Study in Political Economy*. New York: Academic Press.
- Rosen, Gideon. 2010. "Metaphysical Dependence: Grounding and Reduction." In *Modality: Metaphysics, Logic, and Epistemology*, edited by Bob Hale and Aviv Hoffman, 109-136. Oxford: Oxford University Press.
- Ross, Don. 2008. "Two Styles of Neuroeconomics." *Economics and Philosophy* 24 (3):473-483.
- Sawyer, R. Keith. 2002. "Nonreductive Individualism: Part I." *Philosophy of the Social Sciences* 32 (4):537-559.
- . 2005. *Social Emergence*. Cambridge: Cambridge University Press.
- Schaffer, Jonathan. 2012. "Grounding, Transitivity, and Contrastivity." In *Metaphysical Grounding: Understanding the Structure of Reality*, edited by Fabrice Correia and Benjamin Schnieder, 122-38. Cambridge: Cambridge University Press.

## BIBLIOGRAPHY

- Schaffner, Kenneth F. 1967. "Approaches to Reduction." *Philosophy of Science* 34:137-47.
- . 1993. "Theory Structure, Reduction, and Disciplinary Integration in Biology." *Biology and Philosophy* 8 (3):319-347.
- Schmitt, Frederick. 2003. "Socializing Metaphysics: An Introduction." In *Socializing Metaphysics*, edited by Frederick Schmitt, 1-37. Lanham: Rowman & Littlefield.
- Schnapp, Jeffrey Thompson, and Matthew Tiewis. 2006. *Crowds*. Stanford: Stanford University Press.
- Schwann, Theodor. [1839] 1847. *Microscopical Researches into the Accordance in the Structure and Growth of Animals and Plants*. Translated by Henry Smith. London: Sydenham Society.
- Searle, John R. 1995. *The Construction of Social Reality*. New York: Free Press.
- . 2008. "Language and Social Ontology." *Theory and Society* 37 (5):443-459.
- . 2010. *Making the Social World: The Structure of Human Civilization*. Oxford: Oxford University Press.
- Shagrir, Oren. 2002. "Global Supervenience, Coincident Entities, and Anti-Individualism." *Philosophical Studies* 109:171-196.
- Shah, Nishi. 2008. "How Action Governs Intention." *Philosophers' Imprint* 8 (5):1-19.
- Shapiro, Lawrence. 2000. "Multiple Realizations." *Journal of Philosophy* 97 (12):635-654.
- Shapiro, Scott. 2009. "What Is the Rule of Recognition (and Does It Exist)?" In *The Rule of Recognition and the U.S. Constitution*, edited by Matthew Adler and Kenneth Himma, 235-268. New York: Oxford University Press.
- . 2011. *Legality*. Cambridge: Belknap Press.
- Shapiro, Scott J. 2007. "The 'Hart-Dworkin' Debate: A Short Guide for the Perplexed." In *Ronald Dworkin*, edited by A. Ripstein, 22-55. Cambridge: Cambridge University Press.
- Sheehy, Paul. 2002. "On Plural Subject Theory." *Journal of Social Philosophy* 32:377-394.
- Shoemaker, Sydney. 1999. "Self, Body, and Coincidence." *Proceedings of the Aristotelian Society* 73 (73):287-306.
- . 2003. "Realization, Micro-Realization, and Coincidence." *Philosophy and Phenomenological Research* 67 (1):1-23.
- Sider, Theodore. 1999. "Global Supervenience and Identity across Times and Worlds." *Philosophy and Phenomenological Research* 59:913-937.
- . 2001. *Four-Dimensionalism: An Ontology of Persistence and Time*. Oxford: Oxford University Press.

## BIBLIOGRAPHY

- . 2002. "The Ersatz Pluriverse." *The Journal of Philosophy* 99 (6):279-315.
- . 2006. "Yet Another Paper on the Supervenience Argument against Coincident Entities." *Philosophy and Phenomenological Research* 77 (3):613-624.
- . 2009. "Ontological Realism." In *Metametaphysics: New Essays on the Foundations of Ontology*, edited by David John Chalmers, David Manley and Ryan Wasserman, 384-423. Oxford: Oxford University Press.
- Simons, Peter. 1987. *Parts: A Study in Ontology*. Oxford: Oxford University Press.
- Skiles, Alexander. Manuscript. "Against Grounding Necessitarianism".
- Sleigh, Charlotte. 2007. *Six Legs Better: A Cultural History of Myrmecology*. Baltimore: Johns Hopkins University Press.
- Smith, Adam. [1776] 2006. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Cirencester: Echo Library.
- Smith, Barry. 2003. "John Searle: From Speech Acts to Social Reality." In *John Searle*, edited by Barry Smith, 1-33. Cambridge: Cambridge University Press.
- . 2008. "Searle and De Soto: The New Ontology of the Social World." In *The Mystery of Capital and the Construction of Social Reality*, edited by Barry Smith, David Mark and Isaac Ehrlich, 35-51.
- Spencer, Herbert. 1895. *The Principles of Sociology*. Vol. 1. New York: Appleton.
- Stalnaker, Robert. 1968. "A Theory of Conditionals." In *Studies in Logical Theory, American Philosophical Quarterly Monograph Series*, 98-112. Oxford: Blackwell.
- . 1996. "Varieties of Supervenience." *Philosophical Perspectives* 10:221-41.
- Strevens, Michael. 2007. "Review of Woodward, Making Things Happen." *Philosophy and Phenomenological Research* 74 (1):233-249.
- Suppe, Frederick. 1972. "What's Wrong with the Received View on the Structure of Scientific Theories?" *Philosophy of Science* 39 (1):1-19.
- . 1977. *The Structure of Scientific Theories*. Urbana: University of Illinois Press.
- Suppes, Patrick. 1967. "What Is a Scientific Theory?" In *Philosophy of Science Today*, edited by S. Morgenbesser, 55-67. New York: Basic Books.
- Surowiecki, James. 2005. *The Wisdom of Crowds*. New York: Anchor Books.
- Szwed, John. 2002. *So What: The Life of Miles Davis*. New York: Simon and Schuster.
- Thalos, Mariam. 2013. *Without Hierarchy: The Scale Freedom of the Universe*. New York: Oxford University Press.

## BIBLIOGRAPHY

- Thomson, Judith Jarvis. 1983. "Parthood and Identity across Time." *Journal of Philosophy* 80:201-220.
- . 1998. "The Statue and the Clay." *Noûs* 32:149-173.
- Thoreau, Henry David. [1854] 1966. *Walden*. New York: W.W. Norton.
- Tinbergen, Jan. 1956. *Economic Policy: Principles and Design*. Amsterdam: North-Holland.
- Tollefsen, Deborah. 2002. "Organizations as True Believers." *Journal of Social Philosophy* 33 (3):395-411.
- Tuomela, Raimo. 1989. "Collective Action, Supervenience, and Constitution." *Synthese* 80:243-266.
- . 1995. *The Importance of Us: A Philosophical Study of Basic Social Notions*. Stanford: Stanford University Press.
- . 2002. *The Philosophy of Social Practices: A Collective Acceptance View*. Cambridge: Cambridge University Press.
- . 2007. *The Philosophy of Sociality: The Shared Point of View*. Oxford: Oxford University Press.
- . 2011. "Searle's New Construction of Social Reality." *Analysis* 71 (4):706-719.
- . 2013. *Social Ontology*. Oxford: Oxford University Press.
- Tuomela, Raimo, and Kaarlo Miller. 1988. "We-Intentions." *Philosophical Studies* 53 (3):367-89.
- . 2005. "We-Intentions Revisited." *Philosophical Studies* 125 (3):327-69.
- Udehn, Lars. 2001. *Methodological Individualism: Background, History, and Meaning*. London: Routledge.
- . 2002. "The Changing Face of Methodological Individualism." *Annual Review of Sociology* 28:479-507.
- Unger, Peter. 1979. "There Are No Ordinary Things." *Synthese* 41 (2):117-154.
- Uzquiano, Gabriel. 2004. "The Supreme Court and the Supreme Court Justices: A Metaphysical Puzzle." *Noûs* 38 (1):135-153.
- van Benthem, Johan. 1996. *Exploring Logical Dynamics*. Stanford: CSLI Publications.
- van Cleve, James. 1990. "Supervenience and Closure." *Philosophical Studies* 58 (3):225-238.
- van Fraassen, Bas C. 1972. *A Formal Approach to the Philosophy of Science*. Pittsburgh: University of Pittsburgh Press.
- . 1977. "The Pragmatics of Explanation." *American Philosophical Quarterly* 14 (2):143-150.
- . 1987. "The Semantic Approach to Scientific Theories." In *The Process of Science*, edited by N.J. Nersessian, 105-124. Dordrecht: Nijhoff.

## BIBLIOGRAPHY

- van Inwagen, Peter. 1987. "When Are Objects Parts?" *Philosophical Perspectives* 1:21-47.
- . 1990. *Material Beings*. Ithaca: Cornell University Press.
- Virchow, Rudolf Ludwig Karl. 1860. *Cellular Pathology: As Based Upon Physiological and Pathological Histology*. Translated by Franklin Chance. London: John Churchill.
- von Neumann, John, and Oskar Morgenstern. 1944. *Theory of Games and Economic Behavior*. Princeton: Princeton University Press.
- von Ranke, Leopold. [1836] 1981. *The Secret of World History: Selected Writings on the Art and Science of History*. Translated by Roger Wines. New York: Fordham University Press.
- Wallace, Walter. 1996. "A Definition of Social Phenomena for the Social Sciences." In *The Mark of the Social: Discovery or Invention*, edited by John Greenwood, 37-58. Lanham: Rowman and Littlefield.
- Wasserman, Ryan. 2002. "The Standard Objection to the Standard Account." *Philosophical Studies* 111 (3):197-216.
- . 2004. "The Constitution Question." *Noûs* 38 (4):693-710.
- Watkins, J.W.N. 1953. "The Principle of Methodological Individualism." *British Journal for the Philosophy of Science* 3:186-89.
- . 1955. "Methodological Individualism: A Reply." *Philosophy of Science* 22:58-62.
- . 1959. "The Two Theses of Methodological Individualism." *British Journal for the Philosophy of Science* 9:319-20.
- Weber, Marcel. 2004. *Philosophy of Experimental Biology*. Cambridge: Cambridge University Press.
- Weber, Max. 1978. *Economy and Society*. Translated by H.H. Gerth and C. Wright Mills. Edited by Guenther Roth and Claus Wittich. Berkeley: University of California Press.
- Wiggins, David. 1968. "On Being in the Same Place at the Same Time." *Philosophical Review* 77 (1):90-95.
- . 2001. *Sameness and Substance Renewed*. Cambridge: Cambridge University Press.
- Williamson, Timothy. 1991. "Fregean Directions." *Analysis* 51:194-95.
- . 2013. *Identity and Discrimination*. Oxford: Wiley-Blackwell.
- Wimsatt, William. 1976. "Reductionism, Levels of Organization, and the Mind-Body Problem." In *Consciousness and the Brain*, edited by Globus, Maxwell and Savodnik, 205-263. New York: Plenum Press.
- . 1994. "The Ontology of Complex Systems: Levels of Organization, Perspectives, and Causal Thickets." *Canadian Journal of Philosophy* 20 (Supplement):207-274.

#### BIBLIOGRAPHY

- Wisdom, J.O. 1970. "Situational Individualism and the Emergent Group Properties." In *Explanation in the Behavioural Sciences*, edited by R. Borger and F. Cioffi, 271-96. Cambridge: Cambridge University Press.
- Witmer, D. Gene, William Butchard, and Kelly Trogdon. 2005. "Intrinsicity without Naturalness." *Philosophy and Phenomenological Research* 70 (2):326–350.
- Wynne-Edwards. 1962. *Animal Dispersion in Relation to Social Behaviour*. Edinburgh: Oliver & Boyd.
- Yablo, Stephen. 1987. "Identity, Essence, and Indiscernibility." *Journal of Philosophy* 84:293-314.
- . 1999. "Intrinsicity." *Philosophical Topics* 26:479-505.
- Zangwill, Nick. 2008. "Moral Dependence." *Oxford Studies In Metaethics* 3:109-127.