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The Naive Conception of Material Objects: A Defense

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The Naive Conception of Material Objects: A Defense

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The Naive Conception of Material Objects: A Defense

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I defend a naive conception of material objects, according to which there are such things as stones, statues, cats and their tails, but no "strange fusions" of such things as my nose and the Eiffel Tower. Virtually everyone in the literature rejects the naive conception in favor of some revisionary theory of material objects. Eliminativists (e.g., Unger, van Inwagen, Merricks) deny that there are such things as statues and stones and, in some cases, cats as well. Universalists (e.g., Lewis, Rea, Sider) hold that for any objects you like—even my nose and the Eiffel Tower—there is a single object composed of those objects. These revisionary theories are manifestly counterintuitive, but there are powerful arguments for preferring them to the naive conception.

The first part of the dissertation is devoted to showing how these arguments can be resisted. First, I assess the charge that, given the correctness of the naive conception, it would have been a miraculous stroke of luck for us to have hit upon the privileged conceptual scheme. Second, I examine the Lewis-Sider argument from vagueness for unrestricted mereological composition, Third, I show that the grounding problem for coincident modally discernible objects can be solved. Fourth, show that the causal exclusion argument as applied to ordinary objects can be resisted without either systematic overdetermination or epiphenomena.

In the second part of the dissertation, I argue that the prima facie conflict between revisionary theories and our ordinary discourse, beliefs, and intuitions about material objects proves to be an insurmountable problem for those theories. First, I argue that existing attempts to reconcile revisionary theories of material objects with folk discourse are unsatisfactory, Second, I provide a perspicuous statement of the "challenge from folk belief" and argue that the standard strategies for meeting the challenge are unsatisfactory.

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Introduction

I will defend a view according to which the world is very much the way it seems to be. There are cats, tails, mountains, baseballs, statues, and lumps of clay. There is nothing at all composed of my nose and the Eiffel tower, nor are there such things as incars, snowdiscalls, or trout-turkeys.[1] Cats can survive the loss of their tails, lumps can survive being flattened, and statues cannot. I call this the naive conception of material objects. Not everyone will agree that it is properly so called; indeed, many philosophers will deny that our pretheoretical beliefs genuinely committed us to tables, or that they genuinely rule out the strange things just mentioned. But the view nevertheless seems to me deserving of this name, for it is the view that is most likely to attract those who (like myself) are typically disinclined to surrender their pretheoretical beliefs and intuitions on the basis of highly theoretical considerations.

My project is best viewed not as an attempt to show that the naive conception is correct, but rather as an attempt to show that the costs of accepting the naive conception as not nearly as great as they are widely believed to be. For instance, reflection on the range of alternative, strange conceptual repertoires that we might have come to employ is meant to leave the proponent of the naive conception with the following two options:

- Deny that our conceptual scheme is privileged with respect to strange schemes.
- Admit that it is somehow miraculous that we acquired this conceptual scheme.

In the first chapter, I argue that one can accept the naive conception without incurring either of these costs. So long as one accepts (i) the already widely accepted view that which concepts we employ is determined in part by the kinds of things with which we

[1] See chapter 1 for more on these strange kinds.

interact, and (ii) the already widely accepted view that human beings are sufficiently intelligent to understand their our concepts, one can embrace the natural view that our scheme is privileged with respect to extraordinarily strange schemes *and* that there is nothing the least bit miraculous about our having come to have acquired the privileged scheme.

In the second chapter, I address the "argument from vagueness," which is widely believed to show that one can avoid unrestricted mereological composition only by biting one of the following bullets:

- Composition never occurs
- There cannot be borderline cases of composition
- Some logical vocabulary (e.g., '∃', '∀', '=') is vague

I show that the argument from vagueness can be resisted without incurring any of these costs. The strategy will be to show that a sentence can lack a determinate truth value as a result of Soritical phenomena without containing vague vocabulary. This can be independently motivated and, intuitively, is exactly what is going on in the apparent cases of borderline composition at issue in the argument from vagueness.

Since the proponent of the naive conception countenances both lumps of clay and statues, and takes the former to have a property that the latter lacks—namely, being able to survive flattening—the commitment to distinct but wholly co-located material objects is pretty much unavoidable. No single object can be both able and unable to survive flattening. Proponents of the naive conception can take some comfort in the fact that, however counterintuitive the co-location of distinct concrete entities may be, co-location can be avoided only at far greater cost:

- Eliminating statues, lumps, or both
- Accepting highly revisionary theories about the properties these items possess
- Accepting a highly revisionary semantics (e.g., the nonrigidity of proper names)
- Rejecting the indiscernibility of identicals

But co-location is often held to have an important further cost of its own, namely, commitment to brute modal facts: there are no nonmodal differences between the statue and clay that can serve as an ultimate explanation, or "ground," of their modal differences. In the fourth chapter, I show that one can accept that the statue and clay are distinct without incurring this cost so long as on accepts either (i) a mereological pluralism on which the parthood relation that holds between the statue and its parts is distinct from the parthood relation that holds between the lump and its parts, (ii) the thesis that an artifact cannot come into existence in the absence of de re creative intentions, or (iii) the thesis that what it is for the statue to exist is different from what it is for the lump of clay to exist. I argue that, if any one of these theses is correct, the modal differences between statues and lumps can be grounded. Thus, the price of co-located statues and clay is far lower than is widely believed.

In the fourth chapter, I discuss the causal exclusion argument against ordinary macroscopic objects. The argument is meant to establish that one cannot accept that there are baseballs without incurring one of the following costs:

- Baseballs are epiphenomena—they altogether lack causal powers.
- Events caused by baseballs are systematically overdetermined.
- Baseballs have emergent properties.

There is already good reason to wonder whether these costs themselves are so great. But I argue that one can accept that there are baseballs without incurring any of these costs. One need only hold that there is a division of causal labor: baseballs cause windows to shatter, while the microscopic parts of baseballs cause the microscopic parts of windows to shatter. And baseballs need not have emergent properties in order to do this causal work.

The costs then are minimal. The costs of revisionary conceptions, by contrast, seem extraordinarily high, for they evidently are deeply at odds with our discourse, pretheoretical beliefs, and intuitions about material objects. Proponents of revisionary theories typically deny that there is any great cost, either because they deny that their theories are in any way at odds with folk ontology, or because the deny that flouting folk belief is such a great cost. In the final two chapters, I argue that the costs of revisionary theories are far greater than is widely believed.

In the fifth chapter, I focus on those revisionary theorists who maintain that, despite appearances, their theories are compatible with folk belief. Universalists, for instance, often maintain that the folk restrict their quantifiers so as to exclude strange composites when the things that they say seem to suggest that they take there to be no strange composites. I argue that these semantic hypotheses are unacceptable. There is no evidence—linguistic, psychological, or otherwise—supporting any of them. The cost of such compatibilists strategies lies in their implausible and seemingly unmotivated semantic commitments.

Those who admit that their theories are in conflict with folk ontology recognize that they thereby incur some kind of explanatory burden, but the nature of that burden has

not been fully appreciated. In the final chapter, I provide a perspicuous statement of the challenge posed by folk belief and argue that the standard strategies for meeting the challenge are unsatisfactory. The cost of such incompatibilist strategies lies in the fact that they are entirely unable to account for the reasonableness and resilience of the folk beliefs that conflict with their theories.

If my arguments are sound, it would seem that the costs of the naive conception are sufficiently low—and the costs of the alternatives sufficiently high—that the naive conception should be preferred or, at the very least, taken far more seriously than it is at present.

I

Ordinary Objects and the Argument from Strange Concepts[*]

1. Introduction

A snowdiscall is something made of snow that has any shape between being round and being disc-shaped *and* which can survive taking on all and only shapes in that range. So a round snowdiscall (unlike a snowball) can survive being flattened into a disc but (unlike a quantity of snow) cannot survive being packed into the shape of a brick. Ernest Sosa maintains that one can avoid commitment to snowdiscalls (and things of countless other strange kinds) only by embracing either a nihilist thesis on which there are neither snowballs nor snowdiscalls or a relativist thesis on which material objects do not exist simpliciter but only relative to some conceptual scheme or other.[2]

Curiously, Sosa does not even mention (let alone provide an argument against) a naive conception of material objects according to which there are snowballs but no snowdiscalls and on which material objects enjoy a scheme-independent existence. But many philosophers have followed Sosa both in invoking strange concepts in support of revisionary theories of material objects and in failing to make explicit how they are meant to render a naive conception untenable. The literature is now overflowing with examples of strange kinds: apceans, bligers, carples, cdogs, cpeople, dwods, emeroses, gollyswoggles, incars, klables, monewments, shmees, shmrees, slithy toves, snowdiscalls,

[*] Thanks to George Bealer, John Bengson, Reid Blackman, Josh Dever, Matti Eklund, Adam Elga, John Hawthorne, Eli Hirsch, Cory Juhl, Mark Sainsbury, and Ted Sider.
[2] See his (1987, 178-82), (1993, 619-25), and (1999, 132-4).

trables, trout-turkeys, and wakers.[3] I will examine why the mere availability of strange kind concepts is meant to pose a threat to the naive conception, and I will show that the proponent of the naive conception has the resources to defuse the threat.

2. The Naive Conception and Strange Concepts

There are more things in heaven and earth than are dreamt of in our present conceptual scheme.[4] There are things so distant or so hidden that we have yet to discover them. The proponent of the naive conception would not have it any other way. What the proponent of the naive conception does deny is that there are highly visible things that we encounter on a daily basis but that we have yet to discover; there is a more or less exact correlation between the highly visible kinds of things that we frequently encounter and our concepts of the kinds of things that we take ourselves to frequently encounter.[5] Furthermore, our conceptions of these kinds of things—in particular, our conceptions of their persistence conditions—are largely correct.

Strange concepts are concepts that correspond to strange ways of classifying and individuating objects. All strange concepts are not created equal. There are three varieties: those that actually have instances, those that could not possibly have had

[3] The examples of gollyswoggles, bligers, and dwods come from van Inwagen (1990); Shoemaker introduces klables (1988, 201); Ginet, monewments (1985, 220); Sosa, snowdiscalls (1987, 178); Goodman, emeroses (1955, 74-5); van Cleve, shmees (1999, 487-8); Merricks, slithy toves (2000, 50); Lewis, trout-turkeys (1991, 80); Sider, wakers (2001, 157). The rest are due to Eli Hirsch (1982 and 1993a).

[4] By 'conceptual scheme', I mean nothing more than the collection of concepts that we (collectively) employ. Strange conceptual schemes, in this sense, need not be understood as exhibiting the kind of incommensurability with our present scheme that Davidson (1974) found so objectionable.

[5] By "*our* concepts," I mean to exclude the strange concepts listed above which appear only in the conceptual repertoires of a handful of philosophers.

instances, and those that have no instances but could have. By the lights of the naive conception, strange property concepts often do have instances: some things are grue, for all it takes for there be something grue is for there to be something that is both green and observed before t. There also are toddlescents, where a person is a toddlescent from age two until age fourteen. Strange artifact concepts, on the other hand, typically do not have instances, but would have had someone decided to make something of the relevant artifactual kind. There happen not to be any snowdiscalls, though one could make a snowdiscall if one wished.

Strange counterparts of our natural-kind concepts, on the other hand, are often necessarily vacuous. Consider the concept indog. An indog (at its full size) is like a dog in nearly all respects except that, unlike a dog, it is metaphysically impossible for an indog to survive leaving a house. An indog that comes to the doorway of a house begins to shrink at the threshold of the house, at which time an outdog pops into existence and begins growing. By the time the outdog has grown to its full size, the indog has shrunk and gone out of existence altogether. What it looks like for an indog to shrink at the boundary of a house and be replaced by an outdog is exactly the same as what it looks like for a dog to leave a house; but an indog is not just a dog that is inside a house, for a dog that is inside a house can survive leaving a house.

On the naive conception, there are no indogs. But there do not just happen not to be any indogs; there could not possibly be indogs. In trying to imagine a world more hospitable to indogs, one might imagine a world whose laws of nature dictate that, whenever an animal attempts to pass through a doorway, it is vaporized and seamlessly replaced by a new animal with new matter. But, if this is to be a world in which there are

indogs, the animals that are vaporized as they pass through doorways not only must be nomologically incapable of leaving a house, but metaphysically incapable. They must be incapable of leaving a house even in worlds like ours in which doorways do not vaporize anything. But could there really be animals like this, which cannot make it through a doorway even under more favorable conditions? This seems impossible. There can be dogs that are nomologically incapable of leaving houses but, intuitively, there cannot have been indogs.

3. The Argument from Strange Concepts

How are strange concepts meant to pose a problem for the naive conception? There are at least two sorts of worries that one might have, both having to do with the apparent arbitrariness of our present scheme. The first is a metaphysical worry that the line drawn by the naive conception between the kinds that do and do not have instances is intolerably arbitrary.[6] The second is an epistemological worry about the likelihood of our having acquired the (allegedly) privileged conceptual scheme, given the kinds of factors that lead to our acquisition of this scheme.

My primary focus will be the epistemological worry—not because the metaphysical worry is any less serious, but because we are not yet in a position to properly assess the metaphysical worry. We cannot assess the claim that it is intolerably arbitrary to countenance the kinds of things that the naive conception does but not their strange counterparts until we better understand the tacit principles that underwrite our pretheoretical judgments and intuitions about the kinds of things that there can and

[6] See Horgan (1993) and Sidelle (2002, 119).

cannot be. Only then will we be in a position to decide whether these judgments comprise an arbitrary and unsystematizable hodge-podge or, rather, a complicated but nevertheless natural division among fundamentally different kinds of objects. Nevertheless, the taxonomy of strange kinds that I provide in the paper will hopefully go some way towards showing that these judgments are not as unprincipled as one might initially think.

The epistemological worry posed by strange concepts is, roughly, that it would be an inexplicable coincidence if the kinds of things that we take there to be map perfectly onto the kinds of things that there in fact are. Theodore Sider raises this kind of epistemological concern:

> On one version of the [naive] view, the entities that exist correspond exactly with the categories for continuants in *our* conceptual scheme: trees, aggregates, statues, lumps, persons, bodies, and so on. How convenient! It would be nothing short of a miracle if reality just happened to match our conceptual scheme in this way.[7]

Sider's worry appears to have the following form: If the naive conception is correct, then there is a correlation between our conceptual scheme and reality which cries out for special explanation. But no explanation is available to the proponent of the naive conception. So he must regard this correlation as a miraculous stroke of luck. Let us call this (simply) the argument from strange concepts. In service of clarifying the argument, I will first address the following three preliminary questions: (1) What sort of explanation is required? (2) Why is the proponent of the naive conception meant to be unable to supply such an explanation? (3) Why (and to what extent) are revisionary theories not subject to the same argument?

[7] Sider (2001, 156-7).

(1) Suppose that a magician takes what appears to be an ordinary, well-shuffled deck of cards, shuffles them three times, and produces a well-ordered deck. Intuitively, the fact that the deck is now well-ordered stands in need of special explanation. A mundane causal explanation—for instance, specifying where each card went in each shuffle—would not be entirely satisfactory. Some further explanation is needed because the resultant ordering is (in some sense) privileged with respect to various other orderings that the cards might have come to have as a result of the shuffling. Likewise, if the naive conception is correct, then our present kind concepts are privileged with respect to many of their strange counterparts. Unlike their strange counterparts, our concepts have things answering to them; ours are "metaphysically successful." A mundane historical or psychological explanation of how we came to have our present conceptual scheme would not be entirely satisfactory, for what is needed is an account of why we had a history and a psychology that lead us to a metaphysically successful conceptual scheme, rather than one that lead us to an unsuccessful scheme. This is the kind of *special* explanation that is required.

(2) Why is the proponent of the naive conception meant to be unable to provide such an account? The idea, I take it, is that even supposing that the naive conception is correct about what kinds of things there are, the fact that those are the kinds that there are has no role to play in explaining why we have concepts that apply to them, rather than strange counterparts of those concepts. We have the conceptual scheme that we do largely as a result of interests (survival, convenience, etc.) that "are scarcely implanted in us by nature in order that our beliefs or theories should mirror nature itself."[8] Many

[8] Wiggins (2001, 141). Here Wiggins is speaking on behalf of his opponents.

strange conceptual schemes would serve these interests just as well—schemes which, according to the naive conception, are metaphysically unsuccessful.[9] Accordingly, it is at best fortuitous that we ended up with a metaphysically successful scheme. There is no reason to expect the processes by which we acquire our concepts to have endowed us with the privileged conceptual scheme rather than some strange counterpart. Since they are not designed to select for the privileged scheme, they cannot provide the kind of special explanation that we are looking for.

(3) By denying that our conceptual scheme is in any way privileged, proponents of familiar revisionary theories of material objects are spared the burden of having to provide a special explanation of why we came to have this scheme. According to explosivism, there are objects answering to most (if not all) of the strange counterparts of our kind concepts.[10] According to eliminativism, most (if not all) of our kind concepts fail to apply to anything at all.[11] According to relativism, relative to our scheme there are exactly those kinds of things that we take there to be, but had we had a strange scheme the relevant strange kinds would have existed relative to the scheme that we would then have had.[12] On any one of these views, our concepts turn out to be no better equipped to pick out objects than are their strange counterparts. Accordingly, no special explanation

[9] Assuming that individuals who employed the in/out repertoire were endowed with the kind of cognitive make-up needed for quick dispatch of those concepts, they presumably would be no less fit to survive than someone with our conceptual scheme. See Hirsch (1993a, ch. 5).

[10] Sosa endorses explosivism (1999, 143), as do Sider (2001, 134-9), Eklund (2006), and Thomasson (forthcoming).

[11] Eliminativists include Unger (1980), van Inwagen (1990), Merricks (2001), and Dorr (2005). Hawthorne and Cortens (1995) explore (though do not explicitly endorse) an especially radical strain of eliminativism.

[12] Relativists include Goodman (1978) and Sidelle (1989).

is required for why we have the conceptual scheme that we do, rather than some strange counterpart.

Eli Hirsch, more or less following the lead of Hilary Putnam, defends an alternative view—"the doctrine of quantifier variance"—which is meant to allow that our concepts are not privileged without incurring commitment to these highly counterintuitive revisionary positions.[13] According to Hirsch, dogs exist and indogs do not exist. Indogs do, however, "shmexist"; and just as we are correct about which kinds of things exist, those who employ the indog scheme are correct about which kinds of things shmexist. So the two schemes are on a par. But this response seems only to postpone Sider's original worry. For what would then be miraculous is that we came to employ the concept existence rather than the concept shmexistence (or thmexistence, or khexistence,…). Had our current scheme included the concept shmexistence in place of the concept existence, we would have had all manner of false beliefs (e.g., that dogs shmexist). And there is no reason for natural selection to have favored a scheme that combines our present concepts with the concept existence rather than some strange combination. So Hirsch's view seems no less susceptible to the argument from strange concepts than views on which our concepts are privileged with respect to their strange counterparts.[14]

I will attempt to answer the argument from strange concepts without abandoning the natural view that many of our kind concepts are privileged, as is our concept of

[13] See Hirsch (2002b and 2004), and Putnam (1981 and 1987).
[14] This, however, is not to say that Hirsch cannot answer the argument from strange concepts. My proposed answer to the argument will be available to Hirsch as well—the key idea being that intelligent individuals who understand their concepts can be expected not to make these kinds of a priori errors.

existence. But, as I suggested in §2, strange concepts come in importantly different varieties, and not every concept in our present scheme is privileged with respect to all of its strange counterparts. A proper defense of the naive conception against the argument from strange concepts will therefore have to be sensitive to these differences among strange concepts. The defense will proceed in three stages. First, I address the argument as it applies to those strange concepts that do seem to us to have instances (e.g., toddlescent). Second, I address the argument as it applies to strange concepts that seem to be necessarily vacuous (e.g., indog). Third, I address the argument as it applies to strange concepts that evidently have no instances but could have (e.g., snowdiscall).

In responding to the argument, I shall attempt to establish the following conditional claim: if the naive conception is correct, then nothing in need of special explanation goes unexplained. In establishing this conditional, I shall suppose its antecedent and argue on that basis for its consequent. Accordingly, one must bear in mind that when I assert (for instance) that there are no indogs, this occurs under the supposition that the naive conception is correct. I do not argue that the naive conception is correct. Rather, I assume that it is correct, and demonstrate that the proponent of the naive conception can meet his explanatory obligations.

4. Strange Classifications

We begin by considering concepts corresponding to strange ways of classifying those things that the naive conception already takes there to be. Call these concepts "strange classificatory concepts." The concept grue and the concept toddlescent each have objects answering to them, as does the strange disjunctive concept dwod (where

something is a dwod just in case it is a dog or a squid).[15] The naive conception has no objection to there being things of any of these strange kinds—for they are the very things that fall under the kinds with which we are already familiar (children, squids, etc.).

Since there are objects answering to the strange counterparts of our classificatory concepts, acquiring the classificatory concepts that we did is relevantly like acquiring an unremarkable poker hand. There may have been an exceptionally low probability of acquiring exactly those five cards, but no special explanation is required. Likewise, the fact that we acquired these classificatory concepts rather than their strange counterparts does not require any special explanation.[16]

Of course, once we have the classificatory concepts that we have, there will be a privileged way of conceiving of the conditions on belonging to that kind. For instance, a conception of toddlers as children between ages one and three is privileged with respect to a conception of toddlers as children between ages five and ten; a ten-year-old simply is not a toddler. But there is a perfectly straightforward explanation for why we have the right conception of toddlers and the like, and it is the same as the explanation of why we do not make other kinds of wild a priori mistakes: we are in good cognitive conditions,

[15] See van Inwagen (1990, 6).

[16] One might object that, even though their strange counterparts do have compliants, our classificatory concepts are in some other way privileged—in that they correspond to more "natural" ways of classifying objects—and their acquisition does require special explanation. But, even if this is right, it is equally a problem for the revisionary theories of material objects discussed in §3. Whatever considerations one might invoke in explaining how it is that we came to have natural classificatory concepts, e.g., a Lewis-style theory on which some concepts are intrinsically eligible to be acquired (see his 1983 and 1984), presumably will also be available to the proponent of the naive conception.

we are intelligent, and we understand our concepts.[17] So nothing here that stands in need of explanation goes unexplained. Our having the classificatory concepts we do, and the correct conceptions of them, is in no way miraculous.

One must be careful, here and in what follows, to distinguish between individuative kinds and phased kinds. Instances of individuative kinds belong to the kind that they do, at all moments of their existence, as a matter of de re necessity. *Dog*, for instance, is an individuative kind: for any dog, it is metaphysically impossible for it to cease being a dog without ceasing to exist altogether. Phased kinds are kinds whose members can cease to belong to it without ceasing to exist. *Toddler* is a phased kind: when a toddler grows up, he ceases to be a toddler but does not thereby cease to exist. *Island* likewise appears to be a phased kind. When an island is submerged at high tide, it ceases to be an island, but does not cease to exist. When it re-emerges at low tide, it is once again an island, but has not suffered interrupted existence. As a matter of de dicto necessity, nothing that is an island can be wholly underwater. But there is no corresponding de re necessity: for any given island, it could have been wholly underwater.

The view that the naive conception is intolerably arbitrary seems more plausible than it should when one fails to mark this natural distinction between phased and individuative kinds. To illustrate, consider van Inwagen's argument against the view that there are statues but not gollyswoggles, where something is a gollyswoggle just in case it

[17] Some might suggest that we do not make this kind of a priori mistake because we know the definition of 'toddler'. I, for one, did not. But even before consulting the dictionary, I knew (with certainty) that a ten-year-old is not a toddler.

essentially has precisely this shape [demonstrating some complicated and arbitrary shape].[18]

> [I]f you can make a statue on purpose by kneading clay, then you can make a gollyswoggle by accident by kneading clay. But if you can make a gollyswoggle by accident by kneading clay, then you must, as you idly work the clay in your fingers, be causing the generation and corruption of the members of a compact series of objects of infinitesimal duration.[19]

The argument is compelling, but why? We do not ordinarily take creative intentions to be irrelevant to what (if anything) someone makes. A meteoroid that, as a result of random collisions with space junk, comes to be a qualitative duplicate of some actual statue is not itself a statue. Nor do the collisions bring into existence something with the persistence conditions distinctive of statues, something that cannot survive further collisions that deprive the meteoroid of its statuesque form. It would be a different story had God masterminded the collisions with the intent of sculpting a statue out of the meteoroid. Likewise, while one can successfully intend to make a statue or a gollyswoggle, there is no reason to think that idly and momentarily kneading some clay into the shape of a statue or gollyswoggle results in the creation of something that has the relevant shapes essentially.

Van Inwagen's argument is compelling only when one runs together the individuative-kind concept gollyswoggle with the associated phased concept. A piece of clay may be gollyswoggle-shaped without being a gollyswoggle, for it can be

[18] See van Inwagen (1990, 126). Van Inwagen treats this as a reductio of the view that there are statues.
[19] 1990, 126.

gollyswoggle-shaped without being essentially gollyswoggle-shaped. Let us call anything that has that shape a 'gollyswoggle$_p$'. Idly kneading clay may indeed result in a gollyswoggle$_p$ (and then a hollyswoggle$_p$, a jollyswoggle$_p$, and so on). But this does not involve the generation of any new object, any more than a four-year-old's becoming a five-year-old involves the generation of any new object. It involves only a piece of clay coming to be, and then ceasing to be, a gollyswoggle$_p$. And the proponent of the naive conception will readily agree that there are gollyswoggles$_p$. For a gollyswoggle$_p$ (unlike a gollyswoggle) is just a piece of clay with a certain shape.

So, if one starts thinking that there is nothing so bad about gollyswoggles, or snowdiscalls, or indogs—not on the basis of any argument, but just by failing to see how they are relevantly different from pieces of clay, snowballs, and dogs—it is worth pausing to consider whether one has in mind the phased or individuative versions of these strange kinds. Gollyswoggles$_p$, indogs$_p$, and snowdiscalls$_p$ are perfectly ordinary things (i.e., pieces of clay, portions of dogs, and pieces of snow) with ordinary persistence conditions. Gollyswoggles, indogs, and snowdiscalls, by contrast, are extraordinarily strange.

5. Strange Unsatisfiable Concepts

We turn now to strange concepts that, intuitively, are necessarily vacuous. Many strange individuative-kind concepts (e.g., the concept indog) are unsatisfiable by the lights of the naive conception, and insofar as our own individuative-kind concepts are satisfiable, they are privileged with respect to these strange counterparts. In the present section, I explain why we would expect to have acquired the privileged concepts and not

their strange, unsatisfiable counterparts. In the following section, I address the complaint that it is miraculous that our conceptions of the persistence conditions of the relevant kinds accurately reflect their persistence conditions. I will focus on natural-kind concepts, such as the concept dog, which are a paradigm case of concepts whose strange individuative counterparts are unsatisfiable.

It has come to be widely accepted that which concepts we employ is not determined entirely by our internal states. We have the concept water, while our intrinsic duplicates on twin earth have the concept twater, a concept that does not apply to water but only to the superficially waterlike stuff on their planet. Had we acquired the concept twater or any of the countless other counterparts of the concept water, we would have had metaphysically unsuccessful concepts. But no one thinks that it is a miracle that we have the concept water rather than one of its vacuous counterparts. We have the concept water and not the concept twater because we have interacted with water and not twater. (Indeed, many philosophers hold that it is *impossible* to acquire the concept water unless one has interacted with water.[20])

Nor is it in any way mysterious that our natural-kind concepts work in this way. We evidently have tacit semantic intentions that certain of our words (but not others) express concepts that apply to all and only instances of the natural kinds with which we interact and, accordingly, to employ concepts of those specific kinds.[21] This is why some of our words (like 'water' and 'gold') are "twin-earthable" while others (like 'food' and 'shelter') are not. It is miraculous that our natural-kind concepts are metaphysically

[20] See, e.g., Putnam (1981), McGinn (1989), Sawyer (1998), and Nuccetelli (2003).
[21] See Bealer (2002, 108-9) and my (2006, 509).

successful only to the extent that we have these tacit intentions and that they are efficacious. And there is nothing especially miraculous about that.

For exactly the same reason, it is no miracle that we employ the concept dog rather than the concept indog (or other strange counterpart of that concept). We have the former and not the latter because it is dogs and not indogs with which we are acquainted. That it is dogs and not indogs with which we are acquainted is relevant because we have the intention of employing a natural-kind concept that applies to those furry, barking animals of our acquaintance. And it is no miracle that we have these intentions or that they are efficacious. Given that we have these intentions, we can expect to have acquired metaphysically successful natural-kind concepts, so long as there is any natural kind there at all for a concept to latch onto.

This is so even if one is partially in error about the features of the things with which one is acquainted. We mistakenly believed that Hesperus was a star, but our word 'Hesperus' still managed to express a concept that applied to the planet Venus nonetheless. Likewise, we could still have come to possess the concept dog even had we mistakenly believed that the doglike things of our acquaintance had persistence conditions P, when in fact they have persistence conditions P*. Arguably, however, the relevant conceptions must be at least close enough to being satisfied by dogs in order for us to have the concept dog. I address the complaint that it is miraculous that our conceptions are not *radically* inaccurate in the following section.

Here is one further reason that one might expect us to have metaphysically successful natural-kind concepts. David Lewis has argued that there is a special class of properties that are especially eligible to be referred to, and this plays a critical role in his

answer to skeptical arguments directed against the possibility of determinate reference.[22] If we are to have an answer to related worries concerning the possibility of determinate thought, there must likewise be a special class of intrinsically eligible concepts—though their eligibility may derive entirely from the eligibility of the associated properties. (It is crucial for Lewis's purposes that the properties and concepts be *intrinsically* eligible, not just eligible relative to our specific psychological make-up.) I will not argue that there are eligible properties and concepts; but some proponents of revisionary theories of material objects (e.g., Sider himself: 2001, xxi-xxii) already accept that there are, and so might find the following compelling.

Suppose, then, that concepts may be more or less eligible to be acquired. If our present concepts are more eligible than their necessarily vacuous counterparts, then there is nothing miraculous about the fact that we acquired these concepts rather than those counterpart concepts. And, given the naive conception, there is reason to believe that our natural-kind concepts are especially eligible to be acquired. First, the very fact that we *all* naturally came to have the concept dog, rather than some strange counterpart of that concept, is at least prima facie reason to believe that the concept dog is more eligible than its strange counterparts. Second, if there really is this privileged class of intrinsically eligible concepts, one would expect them to have some special ontological status which sets them apart from other concepts. And the concept dog does have a special status: it can have instances whereas the relevant strange counterparts are necessarily vacuous.[23]

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[22] See his 1983 and 1984.

[23] Lewis contends that the class of eligible referents (properties and things) just is the class of natural referents (properties and things). Things, for Lewis, are natural to the extent that they have "a boundary well demarcated by differences in highly natural properties" (1983, 187). Since all dogs have boundaries demarcated by differences in

So, if there are indeed intrinsically eligible concepts, it is no miracle that we came to have metaphysically successful concepts rather than their strange and unsatisfiable counterparts.

Just as before, however, in order to acquire these eligible concepts our conceptions would arguably have to be near enough to being satisfied by the associated kinds. That is because, on the Lewisian account, the contents of our thoughts are determined only in part by the intrinsic eligibility of relevant concepts. The platitudes that we associate with the relevant concepts also have a role to play, and the concepts that we come to have will be the ones that find the best balance between eligibility and satisfying our platitudes. So, again, the proponent of the naive conception would need to explain why it is not miraculous that our conceptions come near enough to being satisfied by the things with which we are acquainted to ensure that we acquire kind concepts that apply to them. Let us now consider why we should expect to have appropriate conceptions of the kinds of things with which we interact, given the naive conception.

6. Strange Conceptions of Natural Kinds

We have seen that, given the correctness of the naive conception, there is good reason to expect there to be a strong correlation between the natural kinds that we encounter and the natural-kind concepts that we employ. But the proponent of the naive conception holds, not only that we have metaphysically successful kind concepts, but also that we have largely correct *conceptions* of the relevant kinds—in particular, as regards

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highly natural properties, while indogs do not, dogs are a more natural kind of thing than indogs. This might serve as one further reason for thinking that the concept dog is more eligible than the concept indog.

their persistence conditions. These tacit conceptions guide our judgments about whether some item that we have been perceptually tracking does or does not survive a given change.

One might worry that I have only postponed the charge of miraculousness: for what explains the fact that we have the correct conception of dogs, rather than some strange counterpart conception? For instance, we might have come to have a conception of dogs as being metaphysically incapable of passing through a doorway, and upon seeing a dog leave a house we might have judged (even in excellent viewing conditions) that the dog outside the house is a different dog from the dog that was inside the house moments before. There are countless strange and incorrect conceptions of dogs that we might have come to have. The proponent of the naive conception must explain how it is that, among the countless strange conceptions of dogs that we might have come to have, we came to have the accurate conception of their persistence conditions. Or else, he must admit that it is a miraculous stroke of luck.[24]

Here is a first (ultimately unsatisfactory) pass at explaining why we have the privileged conception of dogs. Dogs can survive passing through a doorway. To judge that the dog outside the house is different from the dog inside the house, upon seeing the dog pass through the doorway in good viewing conditions, would be a grievous error. We do not make these kinds of grievous errors because we understand the concept dog, because we are in good cognitive conditions (we are intelligent, attentive, not intoxicated, etc.), and because we do not have radically false empirical beliefs about doorways (e.g.,

[24] The problem at hand is closely related to what Michael Rea has called the "discovery problem," which concerns how we come to know the modal properties of the kinds of things that we encounter. See Rea (2002, 77-107).

that they vaporize and seamlessly replicate things that attempt to pass through them). So it is no more miraculous that we have largely correct conceptions of dogs than it is that we are intelligent and understand the concepts that we employ. Were we in extremely poor cognitive conditions, it would indeed have been surprising if we arrived at the right conceptions. But we are in good cognitive conditions, and it is idle skepticism to suppose otherwise. We are intelligent and we do understand our concepts, and there is nothing at all miraculous about that. So it is not at all miraculous that we have a largely correct conception of dogs.

This explanation is unsatisfactory. While the claim that it is miraculous that we understand our concepts may at first seem unmotivated, it makes better sense in light of the externalist account of concept acquisition invoked above. Indeed it would be somewhat magical if the mere possession of concepts acquired in this way rendered us immune to such errors. On an internalist picture, which kind concepts we have would be in large part constrained by our conceptions of those kinds, leaving little room for misunderstanding our own concepts. But once this tight connection between concept and conception is severed, the possibility of error looms large—and the less concept acquisition is antecedently constrained by our conceptions, the greater the possibility of error.[25]

For this reason, appealing to the fact that we understand the concept dog and other natural-kind concepts that are acquired by way of the indicated kind of tacit intention

[25] By way of analogy, consider an individual in the sort of position that Burge imagines—who shares our concept sofa but misapplies it to overstuffed armchairs (1979, 80)—and suppose that Burge is correct that he has the concepts that he does largely as a result of the activities of his linguistic community. He possesses the concept sofa, but surely no amount of solitary a priori reflection or gain in intelligence will enable him to uncover the error.

cannot serve as a wholly satisfactory explanation of why we have the correct conceptions of the relevant kinds. Nevertheless, there is something right about explaining the fact that we have the correct conceptions of the relevant kinds in terms of understanding concepts. The key will be to focus on concepts that are not acquired in this way and that therefore are not vulnerable to this kind of error. I have in mind such basic elements of our conceptual repertoire as the concepts existence, identical, distinct, object, change, persistence, intrinsic, possibility, necessity, size, shape, color, part, and location.

On a naive conception of material objects, not only is it impossible for there to be indogs, it is impossible for there to be *anything* that ceases to exist simply as a result of changing its location and without undergoing any intrinsic change. Anyone who possesses the concept persistence and is in good cognitive conditions will be aware of these and other platitudes about persistence.[26] It is no more miraculous that we conceive of dogs as being able to survive the transition from being indoors to being outdoors than it is that we are intelligent, that we understand such concepts as persistence, intrinsicality, and location, and that we do not have radically false beliefs about what doorways do. And the reasons for worrying about whether we understand the concept dog (i.e., that its acquisition conditions are externally constrained) seem not to extend to such basic concepts as persistence, intrinsic, and location.[27]

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[26] Of course, it is possible to be in excellent cognitive conditions and understand the concept persistence (and related concepts) as well as anyone and yet not accept such platitudes. Explosivists like Sosa and Sider are a case in point. But the explanation of their error is straightforward: they have been misled by compelling but unsound philosophical reasoning. See Bealer (2002, 111-13) for an account of this familiar kind of intuitional error which does not require understanding these philosophers as in any way lacking mastery of their concepts.

[27] As indicated in §3, Hirsch may appeal to these same considerations in explaining why it is no miracle that we came to have privileged combinations of kind concepts and

Perhaps there is some other reason to worry about whether we are in a position to understand even these fundamental concepts. But it is hard to find reasons that do not give rise to a general skepticism about our ability to understand *any* of our concepts. And this general skepticism threatens to undermine everything that we take ourselves to have established on the basis of conceptual inquiry, including pretty much every premise of every argument that has been raised against the naive conception.[28] So it seems that we must allow that, at least in general, we understand our concepts and do not make grave conceptual errors. The burden would then be on the opponent of the naive conception to find some special reason to think that we are prone to misunderstand such concepts as persistence, change, identity, and the like. Otherwise, the proponent of the naive conception may simply help himself to whatever turns out to be the correct account of how a priori knowledge is possible.

This is all consistent with its being the case that, in the early stages of our cognitive development, we conceived of dogs as being unable to survive leaving a house (cave, enclosure, etc.), and that—since our conception was not near enough to being satisfied by dogs—we initially came to have the concept indog. Even so, as we became more intelligent, one would expect there to have been a conceptual "evolution," or "shift," away from radically strange conceptions and toward the privileged conception.

"existence-like" quantifier concepts: suitably intelligent beings would naturally come to have privileged combinations, and can be expected not to come to have strange combinations, since employing strange combinations would result in countless a priori false beliefs.

[28] For instance, that there cannot be vague objects, that there cannot be materially coincidence objects, that statues (if they exist) cannot survive squashing, that having nonredundant causal powers is a prerequisite for the existence of material objects, that our acquisition of a metaphysically successful scheme stands in need of special explanation, and so forth.

Suitably intelligent beings would find it unnatural to continue employing radically strange conceptions because these conceptions would seem to them to be unsatisfiable. This process would likely continue even once we came to have conceptions that were near-enough satisfied, and finally acquired the privileged concepts. In the words of David Wiggins: "There is room for one and the same concept of *what it is to be an* f , anchored as it is to examples that are grouped together in virtue of resemblances that are nomologically grounded, to be unfolded gradually in a succession of different and improving conceptions" (2001, 82).

Must we conclude, however, that we now possess exactly the right conceptions of the persistence conditions of dogs and the like? If we truly have acquired our present conceptual scheme as the result of the envisaged "succession of different and improving conceptions," it would be immodest to suppose that that we have already reached the end point of this process. I am inclined to agree that our pre-theoretical beliefs about the persistence conditions of dogs and other natural kinds may not be entirely correct (and, thus, that the naive conception may not be entirely correct). This is exactly what one would expect from a realist conception of material objects as mind-independent, a moderate rationalism on which intuition is reliable but not infallible, and a modesty about our degree of intelligence. That said, our cognitive evolution occurred over such a long period of time that perhaps there was more than enough time for us to have reached this end point, even without any deliberate, intuition-driven investigation into the persistence conditions of continuants.

7. Strange Intuitions

A related worry has to do with whether it is miraculous or otherwise inexplicable that we have truth-tracking intuitions about the kinds of things that there can and cannot be. One might hold that we have the intuitions that we do largely as the result of arbitrary features of evolutionary history and upbringing, and would have had quite different intuitions had things gone differently. It might be claimed that the proponent of the naive conception must explain why we came to have the privileged intuitions—since, by hypothesis, any other pattern of intuitions about the persistence conditions that things can and cannot have would have led us to mistaken conceptions of those things—or else he must regard our coming to have truth-tracking intuitions as a miraculous stroke of luck.

But, just as before, this understanding of intuition threatens to give rise to an extreme brand of skepticism, one which threatens to undermine much of what we take ourselves to have learned on the basis of intuition-driven philosophy: that knowledge is not justified true belief, that behaviorism is false, that content internalism is false, that organisms and artifacts have their origins essentially, that names do not have nonrigid descriptive content, and on and on. If there is no reason to expect our intuitions to be truth-tracking, then they plainly cannot serve as a justificatory basis for accepting these results. It is therefore no more incumbent upon the proponent of the naive conception to explain why one should expect our intuitions to be correct than any other armchair philosopher.

In light of this, one might grant that it is no miracle that our intuitions track the truth in general, but nevertheless hold that there are special reasons to worry about our intuitions about material objects in particular. I shall address four candidate reasons.

First, one might contend that the cognitive mechanism responsible for generating our intuitions about persistence is primarily responsive to certain contingent features of our language, not to the facts about persistence. For instance, one might suggest that this mechanism yields the intuition that there can be things of a given kind just in case (i) it is intuitively possible that there be things satisfying the nonmodal conditions for membership in the kind in question, and (ii) one has a sortal term that purports to apply to things having the persistence conditions associated with that kind. The suggestion, then, is that we can expect to have truth-tracking intuitions only if we are lucky enough to have a language containing just the right sortal expressions.

But our intuitions about the kinds of things that there can and cannot be simply are not governed in this way. One does not first need to acquire the term 'snowdiscall' in order to have the intuition that it is possible that there be something made of snow that can survive taking on all and only shapes between being round and being disc-shaped. So having an appropriate sortal term is not a necessary condition for having the relevant intuition.[29] Nor do (i) and (ii) provide a jointly sufficient condition for having the relevant intuitions. Readers of this paper will all have acquired the sortal term 'indog', but presumably do not now have the intuition that there can be things that are metaphysically incapable of leaving a house.[30] So this cannot really be the mechanism underlying our intuitions about material objects.

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[29] One might respond that we *do* have the relevant sortal term, namely, 'artifact'. But if 'sortal term' is to be understood in this broad way, then the proposed mechanism fails to provide a sufficient condition for having the intuition that there are things of a given kind, for incars are artifacts but we do not have the intuition that there can be things with the persistence conditions characteristic of incars.

[30] One might respond that this is because the term 'indog' has not yet been sufficiently entrenched in the language. But if we add, as a necessary condition, that a term be

Second, one might argue that we have reason to mistrust our intuitions about material objects because the distinctions that they lead us to draw between the kinds of things that there can and cannot be seem not to "carve nature at its joints." For instance, one may contend that indogs and outdogs are not relevantly unlike other kinds of things that we are willing to countenance, for instance, islands. Just as in the case of outdogs, there would be no islands if landmasses did not protrude in the relevant way.[31] But, as we have already seen, islands do differ from outdogs in relevant respects. Island is a phased kind, whereas outdog is an individuative kind. This is a real metaphysical difference, and one that our intuitions do track. For notice that, intuitively, there can be indogs_p, where indogs_p are simply portions of dogs inside houses. And there intuitively cannot be islands_i, where an island_i is a land mass surrounded on all sides by water and metaphysically incapable of existing underwater. So our intuitions do track relevant distinctions. As indicated in §4, it is likely that much of the *apparent* arbitrariness of the naive conception is the result of conflating individuative kinds with associated phased kinds.[32]

Third, one might complain that the intuitions about material objects are especially dubious because they purport to be about *what exists*, and intuition cannot be expected to be reliable on such matters. This may well be right, but the intuitions at issue here do not

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sufficiently entrenched, then we cannot explain why people immediately have the intuition that there can be apceans, buncles, carples, and dwods.

[31] I thank Adam Elga for pressing me on this point.

[32] One might complain that we cannot trust our intuitions about material objects in particular because, for some reason or other, we cannot trust intuitions about *what exists*. But the intuitions that I rely on seem wholly innocuous. For instance, the intuition that, in a scenario in which a dog leaves a house, there is nothing that shrinks and vanishes at the boundary of the house seems just as innocuous as the intuition that, in a scenario in which a dog loses a hair, there is a something that survives the change.

purport to be about what exists. Rather, they are all either about what can possibly exist or about what would exist if these or those conditions were met, for instance, the intuition that, in a scenario in which a dog leaves a house, there is nothing that shrinks and vanishes at the boundary of the house. This intuition seems just as innocuous as the intuition that, in a scenario in which a dog loses a hair, there is a something that survives the change—and it is on the basis of such intuitions that virtually all metaphysicians reject mereological essentialism. And there seems to be no reason to think that these intuitions are any more suspect than any other modal intuitions (e.g., about the necessity of origins, the modal status of the laws of nature, and other synthetic a priori matters).

Finally, one might suggest that our intuitions about what kinds of material objects there can and cannot be are primarily responsive to arbitrary features of our upbringing, on the grounds that there are members of other cultures who employ strange conceptual schemes, and to whom it seems (intuitively) that there are things answering to the strange concepts that they employ. Of course, real-life examples of strange conceptual schemes do not pose even a prima facie threat unless they include concepts that, according to the naive conception, cannot have instances. But none of the familiar cases of real-life strange concepts are like this. We sometimes find cultures whose members employ strange color concepts (corresponding to alternative ways of dividing up the color spectrum) or strange phased concepts (e.g., applying to the best friend of one's uncle). But such strange concepts do have instances according to the naive conception; our intuitions do not diverge. We likewise have no trouble recognizing that there truly are different kinds of snowflakes falling under the fine-grained snowflake concepts that the Eskimo (allegedly) employ.

One might complain that, even if there in fact are no communities who have radically different intuitions about what kinds of material objects there can and cannot be, it is at least metaphysically possible that there be such a community. I agree, but I do not see why this is cause for any special concern. For it is likewise metaphysically possible for there to have been a whole community who had the intuition that Gettier-man does know that the man who gets the job has ten coins in his pocket, or that things can be red all over and green all over. It is likewise metaphysically possible for there to have been people whose sensory experiences are radically in conflict with ours, or who have radically different belief-forming mechanisms or who think that modus ponens is an invalid form of argument. But the mere possibility of such communities does not give us any serious reason to doubt the reliability of our own faculties. At best, it is just an idle skepticism.

This concludes my discussion of skepticism about material-object intuitions. Rather than providing positive reasons for expecting to have intuitions that track the truth (which would have led us far beyond the scope of this paper), I have suggested only that there seem not to be any special reasons to think that these intuitions in particular only accidentally track the truth.

8. Strange Artifact Concepts

Let us now turn to strange concepts that have no instances but could have. (I will focus exclusively on artifactual kinds; I know of no other kinds belonging to this category.) There are no snowdiscalls (as far as I know) though one can presumably make one, for instance, by packing some snow into a ball while intending to make a

snowdiscall. One who makes a snowdiscall, however, does not thereby make a snowball, nor does one who makes a snowball thereby make a snowdiscall, even though the two products may be indistinguishable. That the kind of artifacts that there are depends in large part upon the creative intentions of producers is deeply a part of our naive conception of material objects;[33] and, as indicated above, I will not argue that the naive conception is correct, but rather suppose that it is and argue on that basis that nothing in need of explanation goes unexplained.

First, let us consider the argument from strange concepts as it applies to the original producers of various artifacts. There is a sense in which the artifact concepts employed by original producers are privileged with respect to their strange counterparts and another sense in which they are not. Consider the uninstantiated concept spoon*, where a spoon* is like a spoon but with different (yet satisfiable) persistence conditions. The concept spoon is not privileged with respect to the concept spoon* in that they are equally poised to be metaphysically successful: had producers come to have the concept spoon*, they would have made spoon*s. So the fact that, prior to production, the producers of spoons employed the concept spoon rather than spoon* does not stand in need of special explanation. Of course, there will be *some* explanation of how the producers came to employ one concept rather than the other, but this explanation can be given entirely in terms of mundane causal or cultural factors.

On the other hand, since there are spoons but no spoon*s, the concept spoon is to that extent privileged with respect to the concept spoon*—for only the former has compliants. Accordingly, the fact that producers of prototype spoons have the former

[33] See, e.g., Thomasson (2003).

concept rather than the latter stands in need of explanation. But this is easily explained. For their success in creating a spoon depends upon their intending to create a spoon. The fact that they have concepts that apply to their products it no more miraculous than their ability to know what they intended to create.

How about mere consumers and subsequent producers of artifacts? As before, since there are spoons but no spoon*s, the concept spoon is privileged with respect to the concept spoon*, and so the fact that they acquired the former rather than the latter stands in need of explanation. Again, though, there is reason to expect them to have the privileged concepts that apply to the artifacts that they encounter. As we learned from Tyler Burge, we wield our concepts deferentially;[34] and since, as we just saw, there is excellent reason to suppose that those to whom we defer (in this case, producers of prototypes) had the metaphysically successful concepts, we can expect to have the appropriate concepts as well. It is likewise no miracle that we have the appropriate conceptions of the persistence conditions of the artifacts that we encounter. For it is a miracle that we have the correct conception of (say) spoons only to the extent that it is miracle that we know what kind of thing the makers of spoons intended to make. And there is nothing miraculous about that, insofar as we are likely to have acquired testimonial evidence concerning the nature of the products.

Of course, since it is the beliefs and intentions of producers, not consumers, that determine the kind and nature of artifacts, we (consumers) should expect to be mistaken about the natures of artifacts when we are ignorant of, or mistaken about, the intentions of the producers—for instance, when we unearth ancient kitchen utensils and mistake

[34] Burge (1979).

them for religious relics. But, setting aside such cases, we can expect to have the privileged concepts and conceptions of the artifacts with which we interact.

9. Conclusion

I have attempted to provide a general framework for answering the argument from strange concepts without adopting a revisionary theory of material objects. I have argued that, in the case of some strange concepts, the fact that we did not come to have them does not stand in need of special explanation and that, for others, the fact that we did not come to have them can be explained. In seeing how the framework might be extended to accommodate the countless kind concepts that I have not discussed here, one will have to attend carefully to one's intuitions about the metaphysics of familiar kinds and their strange counterparts. If one finds these intuitions unmanageable at times, one should bear in mind that this may be because metaphysics is difficult, not because the naive conception is defective. And if one finds the resultant answer to the argument from strange concepts lacking in the elegance provided by revisionary answers, one should bear in mind that it is more important that a theory be correct than that it be elegant.

II

Restricted Composition Without Sharp Cut-Offs[*]

1. The Argument from Vagueness

On the naive conception of material objects, mereological composition is restricted. Some objects together compose something (e.g., these atoms arranged tablewise), while others do not (e.g., my nose and the Eiffel Tower). A great many metaphysicians have rejected the naive conception in favor of universalism, the thesis that composition is unrestricted.[35] Perhaps the most influential argument for universalism is the argument from vagueness, first advanced by David Lewis, and then elaborated and defended by Theodore Sider.[36] The argument runs as follows:

> (A1) If composition is restricted, then it is possible that there be a soritical series for composition.
>
> (A2) Necessarily, for any soritical series for any F, either there are borderline cases of F in the series or there is a sharp cut-off with respect to F.[37]

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[*] This paper has a long history, and I has benefited greatly from discussions and correspondence with many people. In particular, I would like to thank Chad Carmichael, Josh Dever, Mike Huemer, Dave Liebesman, Aidan McGlynn, Trenton Merricks, Bryan Pickel, Ted Sider, and, especially, Matti Eklund for extensive comments on multiple drafts of this paper and Mark Sainsbury for many invaluable discussions on these topics. Finally, I am indebted to George Bealer who first suggested to me that vagueness might not be the source of the indeterminacy of Sider's numerical sentences.

[35] See, e.g., David Lewis (1986, 212-3), Mark Heller (1990, 49f), James van Cleve (1999/1986), Michael Rea (1998), Theodore Sider (2001), Hud Hudson (2001), and Achille Varzi (2005).

[36] The argument appears in Lewis (1986, 212-3), Sider (1997, 214-22), and Sider (2001, 120-32).

[37] To say that there is a sharp cut-off with respect to F in such a series is to say, not just that there is a pair of adjacent cases such that one is definitely F and the other is definitely

(A3) There cannot be sharp cut-offs with respect to composition.

(A4) There cannot be borderline cases of composition.

(A5) So, there cannot be a soritical series for composition.

(A6) So composition is not restricted.

To say that it is possible that there be a soritical series for composition is to say that it is possible that there be a series of cases leading from a case in which composition definitely does occur to case in which it definitely does not, where each case is extremely similar—in some respect or other—to adjacent cases. Only a proponent of restricted composition who denies that composition *ever* occurs will resist the first premise.

Premise A3 has been the locus of most of the critical literature on the argument from vagueness.[38] It is beyond doubt that this premise is false. One can easily construct a soritical series for composition that contains a sharp cut-off by varying adjacent cases with respect to a feature that is irrelevant to whether composition occurs (e.g., the color or price of the relevant items). But the argument from vagueness can be fortified so as to require one who wishes to block the argument without allowing for borderline composition to endorse a far stronger claim:

(A1') If composition is restricted, then it is possible that there be a soritical series for composition in which there are no sharp cut-offs.

(A2') If it is possible that there be a soritical series for composition in which there are no sharp cut-offs, then it is possible that there be borderline cases of composition.

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not F, but also that this existential generalization has a *witness*, be it (Fa_1 & ~Fa_2) or (Fa_2 & ~Fa_3) or … or (Fa_{n-1} & ~Fa_n)

[38] See Markosian (1998), Merricks (2005), Smith (2006), and Nolan (2006).

(A4) There cannot be borderline cases of composition.

(A5') So, there cannot be a soritical series for composition in which there are no sharp cut-offs.

(A6) So composition is not restricted.

Premise (A3) falls out completely, and (A1') can be resisted only if one accepts that *every* possible soritical series for composition contains a sharp cut-off. But this is counterintuitive in the extreme. Suppose that I am assembling a table, by fastening the top to the base. Just as the removal of one grain cannot make the difference between a heap and a non-heap, moving the top and the base one fraction of a nanometer closer together cannot make the difference between composing something and not composing something.

Those who hold this stronger thesis that every soritical series for composition contains a sharp cut-off may contend that the kinds of features that intuitively are relevant to whether composition occurs (e.g., spatial proximity, degree of unity) are not the features that in fact are relevant to whether composition occurs; and the genuinely relevant features, it may be argued, do not admit of degrees.[39] I will not pursue this line of response. Suffice it to say that this response is not available to one who is interested in blocking the argument from vagueness in a way that respects our intuitions regarding the conditions under which composition occurs.

Premise A4, by contrast, is highly questionable. There will be points in the assembly of the table at which the top and the base are just beginning to be fastened together and at which, intuitively, there is no fact of the matter whether they compose

[39] See, e.g., Merricks (2005).

anything. It seems just as clear that there can be borderline cases of composition as that there can be borderline cases of heaps or baldness.

Those who for independent reasons accept universalism will deny that it is clear that there can be borderline composition; they will insist that any plurality of items composes, at the very least, a mereological sum. But even proponents of universalism may still have a vested interest in resisting Sider's argument against borderline composition. For few metaphysicians are willing to accept that tables are mere sums.[40] It follows that if some things definitely compose a table then they compose something in addition to a sum. But if it is indeterminate whether they compose a table, then it is indeterminate whether they compose something in addition to a sum. And if it is indeterminate whether they compose something in addition to a sum, then it is indeterminate how many things there are.[41] But as we shall see in the following section, if the argument against borderline composition is successful, then such count indeterminacy is impossible. So even those who are sympathetic to universalism—on the grounds that whenever you have some things, they are the parts of a sum—have reason to resist the

[40] The most obvious reason for thinking that tables are not sums is that they have different persistence conditions from sums: sums, unlike tables, can survive arbitrary rearrangements of their parts. So, by Leibniz's law, no table is identical to any sum. Some universalists (e.g., Lewis 1986, Sider 2001) resist this style of argument, maintaining that tables and sums are identical, but only contingently so; but their strategies for resisting these arguments face serious problems (see, e.g., Merricks 2003a against the metaphysical framework and Fine 2003 against the semantic framework of contingent identity theories).

[41] More cautiously (anticipating the distinction between the two types of borderline composition just below), if it is indeterminate whether they compose something in addition to a sum, *and if it is not definitely the case that there is something in addition to the sum such that it is indeterminate whether they compose that thing*, then it is indeterminate how many things there are.

argument against borderline composition, so long as they (i) are averse to sharp cut-offs and (ii) deny that tables can be identified with sums.

In what follows, I present the Sider's argument against borderline composition, identify what I take to be its false premise, and supply independent support for denying this premise. It is typically assumed that one cannot block this argument without incurring commitment to vague logical vocabulary and, in turn, to some form of ontic vagueness. I show that the argument can be resisted without denying that logical vocabulary is perfectly precise. Consequently, we must reassess the extent to which the proponent of borderline composition is committed to any kind of ontic vagueness.

A point of clarification before turning to the argument against borderline composition. There are two varieties of borderline composition. First, there are cases in which some object which definitely exists (e.g., Kilimanjaro) lacks precise boundaries—that is, it is indeterminate which things are its parts. Second, there are cases like that of the top and the base in which there are some things such that it is indeterminate whether they compose something without there definitely being something such that it is indeterminate whether they compose *it*. Call the former 'type-1 borderline composition' and the latter 'type-2 borderline composition'. In what follows, let us understand premises A1' and A4 as implicitly restricted to type-2 borderline composition.

2. Against Borderline Composition

Here is a reconstruction of Sider's argument that there cannot be borderline cases of composition:[42]

[42] Sider (2001, 125-30). Cf. Lewis (1986, 212-3).

(B1) If there can be (type-2) borderline cases of composition, then there can be count indeterminacy.

(B2) If there can be count indeterminacy, then it is possible that some numerical sentence lacks a determinate truth value.

(B3) Necessarily, if a numerical sentence lacks a determinate truth value, then some expression in it is vague.

(B4) Necessarily, no expression in any numerical sentence is vague.

(A4) So there cannot be borderline cases of composition.

Some points of clarification. Numerical sentences are sentences of the following form which say that there are exactly n concrete objects, for some number n (in this case, two): '$\exists x \exists y(Cx \ \& \ Cy \ \& \ x \neq y \ \& \ \forall z(Cz \rightarrow (x=z \ v \ y=z)))$'. To say that there is count indeterminacy is to say that there is no fact of the matter how many things there are—not just that it is unknown how many things there are. Relatedly, to say that a sentence lacks a determinate truth value is to say that the truth value of that sentence, if it has one at all, is not *true* and also is not *false*. Accordingly, as I am using the terms, those who accept bivalence (e.g., epistemicists) will deny that sentences ever lack a determinate truth value, and will likewise deny that there are ever borderline cases of heaps, baldness, and so forth.

The first and second premises are plausible. If there indeed are borderline cases of composition in our assembly process, then it is indeterminate whether the two pieces compose something, in which case it is indeterminate whether there are two things (the top and the base) or three things (the top, the base, and a table). So this sort of borderline

composition does yield count indeterminacy.[43] The second premise seems plausible as well, for if it is indeterminate whether there are n concrete objects, then the numerical sentence for n must lack a determinate truth value.[44]

As for B4, the only piece of nonlogical vocabulary is the concreteness predicate, 'C', which may be stipulatively defined it as follows: not a set, not a number, not a property, not a proposition…. Since none of these categorial expressions are vague, 'C' will not be vague either.[45] Consequently, one who wishes to deny B4 must hold that some of the logical vocabulary in the numerical sentence is vague. The booleans certainly are not vague, and the reasons for thinking the identity predicate cannot be vague are well-known.[46] This leaves the quantifiers. Suppose (for reductio) that the universal or existential quantifier is vague. Vague expressions must (at some world) have multiple candidate extensions. In order for candidate extensions of the quantifiers to differ at all, there must be some item, x, that is a member of one but not the other. Since extensions exist only if their members do, x exists. But whichever extension does not have x as a member cannot be a candidate extension of the *unrestricted* quantifier, since any

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[43] One might be inclined to resist premise B1 on the grounds that, as a matter of necessity, material objects are constituted of infinitely divisible gunk. If so, no matter how sparsely populated a world may be, so long as it is populated at all there will be infinitely many things in this world, as any hunk of gunk has infinitely many parts. Consequently, there would be borderline composition without count indeterminacy, since whether or not some gunky items compose a further item will not affect the cardinality of the items in that world.

[44] This premise is not entirely uncontroversial either. For suppose (per impossible?) that there are infinitely many concreta, but that it is indeterminate whether there are countably many or uncountably many. In that case, no numerical sentence of the (finite) kind that Sider considers that will lack a determinate truth value, despite there being count indeterminacy.

[45] See Sider (2001, 127). Elder (2004, 65) contends, to the contrary, that the concreteness predicate is vague.

[46] See Evans (1978) and Salmon (1981).

admissible extension of the unrestricted quantifier must (definitely) range over everything. So the quantifiers cannot have multiple precisifications. So they cannot be vague.[47]

The third premise is left tacit in Sider's presentation of the argument, but it is needed to secure the validity of the argument. The possibility of blocking the argument against borderline composition by denying this premise, and without maintaining that the numerical sentence or any of its constituent expressions are vague or otherwise in need of precisification, has simply been overlooked in the literature—even by Varzi 2005, which was meant to provide a complete catalogue of the ways of resisting the argument from vagueness.

But the premise warrants close inspection. For there are a whole host of sentences that, at least on the face of it, lack a determinate truth value while containing no vague vocabulary: these include liar sentences, truthteller sentences, sentences involving presupposition failure, reference failure, ambiguity, and semantic underdetermination, and sentences about the future. One who holds, reasonably enough, that there are sources of indeterminacy other than vagueness has reason to question whether the numerical sentence in particular must contain vague vocabulary if it is to lack a determinate truth value. Moreover, this is exactly where the argument *seems* to go wrong: what we want to say about the relevant numerical sentences (if we can!) is that they lack a determinate truth value but that they contain no vague vocabulary. This is exactly what I think the

[47] Cf. Sider (2001, 128-9), Varzi (2005, 494-5), and López de Sa (2006, 399-402). One might try to resist this argument by embracing a (dubious) relativist view on which the extensions do not have to exist *simpliciter* in order for them to serve as candidate extensions for the quantifier.

proponent of the naive conception should say. What remains to be seen is whether there is any good reason why he cannot or should not say this.

3. Soritical Indeterminacy Without Vague Expressions

Those who wish to convince the proponent of the naive conception of the impossibility of borderline composition need to supply some further argument on behalf of premise B3 since, intuitively, B3 is false. In constructing such an argument, one might try to exploit the fact that the truth-value gaps mentioned above seem to have nothing at all to do with *soritical* phenomena. If numerical sentences do indeed sometimes lack a determinate truth value, it is surely as a result of soritical phenomena—in particular, the presence of borderline cases of composition. And soritical phenomena are known to be associated with vagueness.

But, while it is beyond doubt that sentences that lack a determinate truth value as a result of soritical phenomena are typically vague, one who wishes to establish the contested premise on the basis of the association between soritical phenomena and vagueness must be prepared to posit a far tighter association—for instance, that *every* sentence that lacks a determinate truth value as a result of soritical phenomena must contain vague vocabulary. An argument for B3 may be constructed on the basis of this premise:

(C1) Necessarily, if a numerical sentence lacks a determinate truth value, then it lacks a determinate truth value as a result of soritical phenomena.

(C2) Necessarily, for any sentence S, if S lacks a determinate truth value as a result of soritical phenomena, then some expression in S is vague.

(B3) So, necessarily, if a numerical sentence lacks a determinate truth value, then some expression in it is vague.

Both premises of this argument may be resisted. Those who embrace the Fregean view that quantification is intelligible only when (explicitly or tacitly) restricted to some sortal or other will reject this premise for they will hold that the numerical sentence—if its quantifiers are intended not to be tacitly restricted—is unintelligible. In that case, the numerical sentence lacks a determinate truth value, not because of soritical phenomena, but because it is meaningless. So C1 would be false.[48] I will not pursue this line of response here; I leave that to those more sympathetic to the Fregean view.

I will now present some prima facie counterexamples to C2. If the examples were less contentious than they are, I would simply call them counterexamples and take myself to have undermined the argument from vagueness. But they are not less contentious than they are, so I rather take myself only to be supplying the proponent of borderline composition with independent motivation for denying C2.

First, suppose that I am told that Bill has a blue house. I reply:

(1) I do too.

But my house is a borderline case of being blue. Intuitively, this sentence (relative to the context of utterance) lacks a determinate truth value since, plausibly, what it says is that I have a blue house too. Furthermore, it appears to lack a determinate truth value as a result

[48] This, in effect, is Amie Thomasson's response to the argument from vagueness. See her forthcoming, chapter 6).

of soritical phenomena: the reason that it lacks a determinate truth value is that my house is borderline blue. But the sentence uttered appears to contain no vague vocabulary.

Second, suppose that I am helping to organize a raffle, in which participants are assigned numbers between one and thirty. I am instructed to assign only small numbers. I have assigned one through eleven, all of which are definitely small for numbers less than thirty. Twelve is a borderline case of being small for a number less than thirty. I say to a friend, who is aware of my instructions and of my intention to follow them:

(2) Every number has been assigned.

Plausibly (though not uncontroversially), what this sentence says is that every small number has been assigned. If so, then, relative to the indicated context, (2) lacks a determinate truth value as a result of soritical phenomena. But the sentence uttered appears to contain no vague expressions. (Perhaps 'assigned' is vague. But 'assigned' may simply be replaced with a relevant precise expression 'assigned*', and the resultant sentence 'Every number has been assigned*' will serve equally well as a counterexample to C2.)

Third, consider the sentence:

(3) Paul is in the extension of 'bald'.

where Paul is a borderline case of baldness. Since it is indeterminate whether Paul is bald, presumably it is also indeterminate whether Paul is in the extension of 'bald', in which case 'Paul is in the extension of 'bald'' lacks a determinate truth value. Again the indeterminacy is evidently the result of soritical phenomena, and again there appears to be no vague expression in this sentence.[49] ('Bald', of course, is vague, but it is not the

[49] Cf. Graff (2000, 47).

word but rather the name of the word that appears in (3). The name of the word is not vague; it determinately picks out the word 'bald'.[50] And, on the face of it, 'extension' is no less precise than the logical vocabulary featured in numerical sentences.)

Fourth, consider the sentence:

(4) 'Paul is bald' is true.

Since it is indeterminate whether Paul is bald, it should likewise be indeterminate whether it is true that Paul is bald, in which case (4) lacks a determinate truth value, evidently as a result of soritical phenomena. But (4) evidently contains no vague vocabulary.

Not everyone will be convinced that these counterexamples are genuine. For instance, those who accept bivalence, even in the face of the Sorites, will think that these sentences do all have determinate truth values and, consequently, are not counterexamples to C2. Or if (as some contend) quantifier domain restriction is a pragmatic phenomenon, then what is said by (2) is that every number *simpliciter* has been assigned. Consequently, (2) would not be a counterexample to C2, since it would then have a determinate truth value, namely, *false*. Or if (as some contend) the word 'small' does appear in (2), albeit unpronounced or unarticulated, then the sentence does include vague expressions and so is not a counterexample to C2.[51] Finally, some may be willing

[50] Some might contend that the sentence does contain the word 'bald', even though it appears inside quotation marks. This worry may be circumvented by modifying (3) to say 'Paul is in the extension of Jack', where 'Jack' is introduced (in place of ''bald'') to name the word 'bald'. Or, alternatively: 'Paul is in the extension of the eleventh word in this footnote.'

[51] See Stanley and Szabó (2000, 236-245) on grammatical and pragmatic approaches to quantifier domain restriction.

to bite the bullet and accept ‘extension’ and ‘true’ are vague, despite their apparent precision.

I will not argue that those alternative assessments are incorrect. But bear in mind that that it is the proponent of borderline composition who is under attack. It is not enough for the defender of the argument from vagueness merely to show that there are assessments of these sentences on which these sentences would not count as counterexamples to C2. The unfavorable assessments must be shown to be superior, not just available. But these assessments of the alleged counterexamples are all controversial, and the proponent of borderline composition is still within his epistemic rights in rejecting the C2 on the basis of these sentences, even absent decisive reasons for rejecting the unfavorable assessments.

4. Numerical Sentences

On the present account, a numerical sentence may lack a determinate truth value, but not as a result of the vagueness of any expression in the sentence. Numerical sentences are not vague, nor do they admit of multiple precisifications—they are already as precise as any sentence can be. There are then two different ways of developing this assessment of the numerical sentences, depending upon whether one thinks that they lack a determinate truth value as a result of the vagueness of some extrasentential expression, or whether one thinks that they lack a determinate truth value but not as the result of the vagueness of any expression. I will consider each of these assessments in turn (and in reverse order).

Assessment (i). My preferred assessment of the numerical sentences, as well as sentences (1) through (4) above, is that they lack a determinate truth value but not as a result of the vagueness of any expressions. For instance, the indicated occurrence of (1) lacks a determinate truth value because my house is borderline blue; (2), because twelve is a borderline case of being small for a number less than thirty; (3), because Paul is borderline bald. To illustrate, suppose that (as some think) in cases of quantifier domain restriction there is some unarticulated domain variable in the syntax of the sentence which gets assigned a semantic value by the context.[52] For instance, the domain variable associated with a given utterance of 'There is no beer' might be assigned the set of things in the fridge. In the case of (2), the hidden variable will be assigned a set of numbers that are small for numbers less than thirty. It will be indeterminate whether this is the set of numbers one through eleven or the set of numbers one through twelve. As a result, it is indeterminate whether twelve has to have been given out in order for this sentence to be true. So the sentence lacks a determinate truth value. The reason that it is indeterminate whether the variable is assigned a set that contains the number twelve is *not* that 'small' or any expression (including the domain variable) in (2) is vague, but rather that twelve is a borderline case of being small for a number less than thirty. 'Small' is of course vague, but the vagueness of 'small' is not responsible for the fact that (2) lacks a determinate truth value.

How about the numerical sentence? Suppose that the top and the base (from §1) are arranged in such a way that it is indeterminate whether they compose anything. (For

[52] Stanley and Szabó (2000, §7). More cautiously, we should allow that the content of the domain variable may be fixed by other quantifiers in the sentence, as in the sentence 'In every student's house, there is no beer in the fridge.'

ease of exposition, let us ignore everything in the universe other than the top, the base, and that, if anything, which they compose.) Our numerical sentence, '$\exists x \exists y(Cx \ \& \ Cy \ \& \ x \neq y \ \& \ \forall z(Cz \rightarrow (x=z \ v \ y=z)))$', is true just in case every concrete thing that there is is identical to one of two particular (distinct) concrete things. But it is indeterminate whether everything is identical to one of two particular concrete things, because it is indeterminate whether there is something in addition to the top and the base. And the reason that it is indeterminate whether there is something in addition to the top and base—the source of this indeterminacy—is not that the quantifiers or any other expression is vague, but rather that the top and base are a borderline case of composing something. The vagueness of this or that expression does not enter into the explanation of the fact that the numerical sentence lacks a determinate truth value.

The semantics for numerical sentences are just what one would expect: '$\exists x \exists y(x \neq y \ \& \ Cx \ \& \ Cy \ \& \ \forall z(x=z \ v \ y=z)$' is true iff there is a sequence σ such that $\sigma(1) \neq \sigma(2)$ and $\sigma(1) \in \{x: Cx\}$ and $\sigma(2) \in \{x: Cx\}$ and for all sequences σ' and all $n \neq 3$ such that, $\sigma(n) = \sigma'(n)$, either $\sigma'(1) = \sigma'(3)$ or $\sigma'(2) = \sigma'(3)$.[53] The sentence lacks a determinate truth value because it is indeterminate whether, in addition to such sequences as <top, base, base, base, top, …>, there are sequences that include some further item as a member, an item composed of the top and the base. And it is indeterminate whether there are such sequences because it is indeterminate whether, in addition to the top and the base, there is a further item composed of the top and the base. On this account, it is indeterminate what there is, and this indeterminacy is not ultimately explained in terms of linguistic

[53] For artificial languages, the semantics would be given relative to some set D which serves as the domain. Here, we can understand the domain as being everything that there is, which (on pain of paradox) cannot itself be understood to be a set of things. Thanks to Josh Dever for help on the formal details.

indeterminacy. We will return to this feature of the account in the following section and see whether this amounts to an objectionable form of ontic vagueness.

Assessment (ii). According to the second assessment, the numerical sentence, as well as the other alleged counterexamples, lack a determinate truth value as a result of vagueness, without containing any vague vocabulary. The thought is that a sentence may lack a determinate truth value as a result of the vagueness of extrasentential expressions. The occurrence of (1), for instance, lacks a determinate truth value because 'blue' is vague and my house is in some but not other admissible precisifications of 'blue'. The word 'blue' does not appear in the sentence uttered but, according to the present assessment, is nevertheless responsible for the sentence's lack of a determinate truth value.

One who favors this assessment might hold, additionally, that a numerical sentence can lack a determinate truth value as a result of the vagueness of 'compose something'. If there indeed is borderline composition, then 'compose something' will have multiple candidate extensions. A set is a candidate extension of 'compose something' iff (1) it contains every set whose members definitely compose something and (2) it contains no set whose members definitely do not compose something. Supposing that the top and the base are arranged in such a way that they neither definitely do nor definitely do not compose something, 'compose something' will have one candidate extension that includes {top, base}, and another that does not include {top, base}.

The door would then be open to explain why the numerical sentence lacks a determinate truth value in terms of semantic indecision with respect to the semantic value

of ‘compose something’. The explanation would run as follows. The numerical sentence for two is true just in case every concrete thing is identical to one of two concrete things. But it is indeterminate whether every concrete thing is identical to one of two concrete things. This is because it is indeterminate whether the top and base compose something. And it is indeterminate whether they compose something because {the top, the base} is in some but not all candidate extensions of ‘compose something’. Since, intuitively, the reason that the relevant numerical sentences lack a determinate truth value is that there are some things such that it is indeterminate whether they compose something, it is no less plausible to appeal to the vague extrasentential expression ‘compose something’ in explaining why numerical sentences lack a determinate truth value than it was to appeal to ‘blue’, ‘small’, or ‘bald’ in explaining the indeterminacy of the sentences from §3.

There are two sorts of worries that one might have about this assessment; both are serious, but it is not clear that either is decisive. The first concerns the relationship between the precisifications of ‘compose something’ and those of ‘compose’. Precisifications of ‘compose’ will be sets of ordered pairs whose first member is a set and whose second member is a singleton set. A precisification will be admissible iff (1) it contains every pair of objects such that the members of the first member definitely compose the member of the second and (2) it contains no pairs such that the members of the first member definitely do not compose the member of the second. But ‘compose’ evidently has no precisification that includes a pair whose first member is {the top, the base}. For suppose that some precisifications included the pair <{the top, the base}, {the table}>. In order for such precisifications to exist, everything in the transitive closure of the pair must exist, in which case the table exists—in which case (contra hypothesis) it is

not indeterminate whether there is a table. So the precisifications for ‘compose something’ cannot simply be derived from the precisifications of ‘compose’ in any straightforward way, for instance, by taking each precisification of ‘compose’ and constructing a set of all the first members of its constituent pairs.

This line of thought seems to take for granted the following principle: for any two-place predicate ‘R’, the precisifications of the one-place ‘R something’ are derived by taking the sets of the first members of the pairs in the precisifications of ‘R’. But this principle is open to counterexamples. There are borderline cases of wanting something. Andrew the ascetic is a borderline case of wanting an ice cream cone—though there is no particular ice cream cone such that it is indeterminate whether he wants it—and otherwise he wants naught. So Andrew will appear in some but not all precisifications of ‘wants something’ but in no precisifications of ‘wants’ (since there would be nothing to be the second member of the relevant wanter-wanted pair). The only way to save the principle is by allowing “indefinite” objects, or some ersatz version of them, to appear in precisifications (e.g., <Andrew, an ice cream cone>). But then it is open to the defender of borderline composition to say that <{top, base},{a table}> appears in some but not all precisifications of ‘compose’. This would then yield the desired precisifications of ‘compose something’. (Some might object that there is an important disanalogy between the two cases, namely, that ‘wants’ is an intensional transitive verb. But it is not clear why this disanalogy should be in any way relevant, for intensional or no, it still threatens to serve as a counterexample to the general principle under discussion.)

The second worry has to do with the explanation of why it is indeterminate whether the top and the base compose something in terms of semantic indecision with

respect to 'compose something'. One generally expects explanations to support counterfactuals. Accordingly, supposing borderline composition is the result of semantic indecision, it follows that had there been no semantic indecision there would have been no borderline composition. But that is plainly false, for the same reason that pigs would not have been able to fly even had 'pig' meant bird.

But to the extent that this is a problem for the present appeal to semantic indecision, it seems to be a problem for all explanatory appeals to semantic indecision. For instance, Lewis famously claimed that "[t]he reason it's vague where the outback begins is not that there's this thing, the outback, with imprecise borders; rather, there are many things, with different borders, and nobody has been fool enough to try to enforce a choice of one of them as the official referent of the word 'outback'."[54] But surely Lewis would not accept the counterfactual claim that *had* someone been fool enough to enforce a choice, the outback would have had precise borders. So anyone who wishes to appeal to semantic indecision in explaining such indeterminacies will have to deny that these explanations have to support the relevant counterfactuals.

5. Ontological Vagueness and Indeterminacy

I have tried to show that there is an intuitively satisfactory way of blocking the argument from vagueness. In particular, it can be blocked without having to say that there are always sharp cut-offs with respect to composition, and without having to say that any logical vocabulary is vague. Let us now turn to what has been one of the main concerns about borderline composition, namely, that it leads to ontic vagueness.

[54] Lewis (1986, 212).

Sider levies the charge of ontic vagueness in connection with the denial of B4 and the consequences of holding that either the identity predicate or the quantifiers are vague.[55] Since I are here conceding B4 and instead resisting B3—and since there is no clear conception in the literature of what ontic vagueness is meant to be[56]—it is necessary to reassess the claim that proponents of borderline composition incur commitment to ontic vagueness. I will begin by considering whether one incurs commitment to vague properties, vague material objects, or to the vagueness or indeterminacy of the world as a whole. I will then consider whether one incurs commitment to anything else that may be considered a "mark" of ontic vagueness. We will find that virtually all of the usual marks of ontic vagueness are missing, and that the sort of ontic vagueness to which the proponent of borderline composition is committed is in an important sense merely superficial.

One mark of an ontic theory of vagueness is a commitment to vague properties, that is, properties that admit of borderline instances. So, for instance, a semantic theorist and an ontic theorist will agree that falling under a predicate may be a matter of degree, but disagree about whether instantiating a property can be a matter of degree. For instance, they might disagree about whether, in addition to the perfectly precise properties answering to the various precisifications of 'bald' ($bald_1$, $bald_2$, etc.), there is a vague property, baldness, which admits of borderline instances. There is nothing to prevent the proponent of borderline composition from following the semantic theorist in denying that there is a property of being bald.

[55] Sider (2001, 127-129).
[56] See, e.g., Williamson (1994, 248-257), Sainsbury (1994), and Barnes (manuscript).

Nor is there anything to prevent the proponent of borderline composition from saying the same thing in the case of composition. There are just the perfectly precise (causal-cum-spatiotemporal) properties that collections of things may collectively instantiate, and it is indeterminate which of them answers to the predicate 'compose something'. Commitment to an additional, vague property of composing something is optional.

One might contend that the proponent of borderline composition is at least committed to the vagueness of the property of being true, since the sentence '$\exists x \exists y(Cx \ \& \ Cy \ \& \ x \neq y \ \& \ \forall z(Cz \rightarrow (x=z \ v \ y=z)))$' is a borderline case of being true. But the proponent of borderline composition has a number of options here; indeed, he has exactly the same options as the semantic theorist has with respect to the (apparent) borderline truth of 'Paul is bald'. The semantic theorist may deny that this sentence is a borderline case of being true; rather, it is definitely untrue (which is not to say that it is false). This, of course, amounts to surrendering the T-schema, for 'Paul is bald' and ''Paul is bald' is true' will diverge with respect to their truth values. But linguistic theorists (especially supervaluationists) are no strangers to abandoning the T-schema. Those who are unwilling to abandon the T-schema have the option either of insisting that there is no such property as the property of being true in addition to the precise properties $truth_1$, $truth_2$, … and $truth_n$, or of conceding that the property of being true has borderline instances. The proponent of borderline composition has all of the same options. If it is acceptable to abandon the T-schema or to deny that there is any (one) property of being true, then he can avoid commitment to vague properties. If these are unacceptable, then

he must concede that the property of being true is vague, but so must the semantic theorist.

Is the proponent of borderline composition committed to there being vague objects? There are various ways of understanding what a vague object is meant to be, but there seems to be no understanding on which (what I have called) type-2 borderline composition gives rise to vague objects. There is a nonvague top and a nonvague base and it is indeterminate whether there is something composed of them. It does not follow that there exists some x such that it is indeterminate whether they compose x. It does not follow that there exists some x such that it is indeterminate whether x exists.[57] It does not follow that there exists some x that lacks sharp boundaries.[58] And it does not follow that there is some object x such that, for some y, it is indeterminate whether x = y.[59] This last point is especially pertinent, since one of the main worries associated with ontic vagueness concerns the incoherence of indeterminate identity, but type-2 borderline composition does not even purport to give rise to indeterminate identity.[60]

So far we have seen that the proponent of borderline composition is committed neither to vague properties nor to vague objects. Now let us consider whether he is committed to the vagueness or indeterminacy of the world as a whole. If this is to amount to anything more than the claim that the world contains vague objects, or objects that

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[57] This seems to be what Lewis has in mind when he asks (rhetorically), "What is this thing such that it sort of is so, and sort of isn't, that there is any such thing?" (1986, 212-3).

[58] See Morreau (2002); cf. Tye (1990, 535-6) for this characterization of vague objects.

[59] This seems to be how Evans (1978) is conceiving of vague objects; otherwise, his argument from the incoherence of indeterminate identity to the impossibility of vague objects looks to be a nonsequitur.

[60] Yet another conception of vague objects is as objects that are a borderline instance of some vague property; see Rosen and Smith (2004, 187-88). We have already examined whether the proponent of borderline composition incurs commitment to vague properties.

instantiate vague properties, the idea must be that in some sense there is indeterminacy "all the way down."[61] (For instance, one would not say that the world as a whole is vague by virtue of containing an object that is a fully determinate shade of turquoise, which happens to be a borderline case of being blue.) But the proponent of borderline composition may accept that facts about how many concrete things there are, and about whether some things compose something, always supervene on precisely describable facts about the arrangements of more fundamental items (e.g., mereological simples). To the extent that there is a more fundamental level at which there is no indeterminacy, and in terms of which soritical indeterminacies at less fundamental levels may be explained, the world itself is not vague or indeterminate.

The absence of commitment to worldly indeterminacy in the indicated sense has important implications with respect to the seriousness of the sorts of ontic vagueness that (as we are about to see) the proponent of borderline composition does end up committed to. Consider what Rosanna Keefe and Peter Smith have to say in connection with worldly indeterminacy:

> Suppose our world is constituted by fundamental particles and fundamental properties both of which are entirely determinate: for an object *a* and property *P* in this catalogue of "base level" items, it will either be a fact that *a* has *P*, or a fact that it does not…. Suppose additionally that the totality of these base-level facts fixes everything else… Arguably, on this picture, any apparent ontic vagueness of the fuzzy-boundaried mountains etc. is merely superficial.[62]

[61] See Rosen and Smith (2004, 194-197) for a more detailed explication of worldly indeterminacy.
[62] Keefe and Smith (1997, 56).

Likewise, if all of the facts about composition can be explained in terms of fully precise facts about the (fully determinate) features and arrangement of fundamental particles, then it would seem that indeterminacy with respect to whether some things compose something is superficial as well. And if indeterminacy with respect to whether the top and base compose something is an unobjectionable, superficial indeterminacy—on account of its being explainable in terms of fully precise facts—then so is the resultant indeterminacy with respect to what there is and how many things there are.

To see why object-level indeterminacy is unobjectionable when it can be explained in terms of wholly determinate facts, it may be useful to consider why linguistic theories of indeterminacy are meant to be unobjectionable. Linguistic theories are presumably meant to avoid commitment to any objectionable kind of indeterminacy because the *ultimate explanation* of soritical indeterminacy does not invoke any objectionable kind of indeterminacy (the idea being that indeterminacy with respect to the meaning of words is an unobjectionable kind of indeterminacy). The proponent of borderline composition may likewise supply an ultimate explanation of all soritical indeterminacy without invoking any objectionable kind of indeterminacy—indeed, without invoking any indeterminacy at all.

Similar points apply to the proponent of borderline composition's commitment to what metaphysicians call "vague existence."[63] For there to be vague existence is for there to be some things such that its indeterminate whether they compose something, without there being something such that it is indeterminate whether *it* is composed of those things. That is, it is for there to be type-2 borderline composition. But what is so

[63] See Hawley (2002) and Merricks (2005).

objectionable about vague existence? After all, as we have just noted, this kind of indeterminacy can be wholly explained in terms precisely describable facts about fully determinate entities and their fully determinate features and arrangements.

(Perhaps the worry is that the proponent of vague existence is forced to deny (instances of) the following compelling principle:

(*) $\nabla\exists y(\Phi y) \rightarrow \exists y\nabla(\Phi y)$

But we know that relevantly similar principles are false, for instance, the Barcan Formula: $\Diamond\exists x\Phi x \rightarrow \exists x\Diamond\Phi x$. It is possible for there to have been someone who is my sister, but there is no one such that possibly she is my sister (given the necessity of origins).[64] So the Barcan Formula is false. The proponent of borderline composition rejects the relevant instance of (*) on the basis of similarly intuitive counterexamples: it is indeterminate whether there is anything composed of the top and the base, but it does not follow that there is something such that it is indeterminate whether *it* is composed of the top and the base. So it is difficult to see why one should be any more confident about (*) than one is about the Barcan Formula, which is known to be false.)

What we have seen is that the proponent of borderline composition is not committed to ontic vagueness in any of the usual senses. He is not committed to vague properties, vague objects, indeterminacy identity, or the vagueness of the world as a whole. And insofar as he is committed to anything that might legitimately called ontic vagueness, it is ontic vagueness of a superficial variety, and it is far from clear that there is anything seriously objectionable about these kinds of ontic vagueness.

[64] See Menzel (2007).

6. Conclusion

I conclude that the argument from vagueness is not satisfactory as it stands. The premise that a numerical sentence must contain vague vocabulary if it is to lack a determinate truth value can be resisted. Unless this crucial premise can be adequately defended, one cannot expect to persuade proponents of the naive conception that borderline composition is impossible or that composition is unrestricted by means of the argument from vagueness.

III

Three Solutions to the Grounding Problem for Coincident Objects[*]

1. The Grounding Problem

Despite being alike in nearly all respects, a statue and the clay of which the statue is made are evidently discernible. Intuitively, the statue cannot survive being flattened; the clay can. I shall assume that these intuitions are correct and that the statue and the clay do indeed differ with respect to their modal properties. Since identicals must be indiscernible, it follows that the statue and clay are distinct, despite occupying exactly the same region of space. This is the majority view among metaphysicians, its counterintuitive consequences notwithstanding. My goal is to answer the most serious objection facing the majority view—the "grounding problem" for coincident objects—by explaining how it is possible for coincident objects to differ modally.[65]

Modal differences between material objects can sometimes be accounted for in terms of their physical differences—for instance, because of their difference in size, a mite can pass through the eye of a needle while a camel cannot. But, given their physical indiscernibility, this kind of explanation is not available in the case of the statue and the clay. In fact, it may at first seem that a statue and the clay of which it is made will be indiscernible in all nonmodal respects. On closer inspection, however, one finds that there can be all sorts of nonmodal differences between the statue and the clay of which it

[*] Thanks to George Bealer, John Bengson, Josh Dever, Shieva Kleinschmidt, Rob Koons, Dave Liebesman, Trenton Merricks, Bryan Pickel, Luke Potter, Mark Sainsbury, Ted Sider, Briggs Wright, and Dean Zimmerman.

[65] The grounding problem has been advanced by Heller (1990, 30-32), Burke (1992), Zimmerman (1995, 87), and Olson (2001), among others.

is made. The clay may be well-made while the statue is not well-made, for instance, if the clay is made out of top-shelf ingredients and yet the statue ends up looking nothing like the person it is meant to be a statue of. The statue may be damaged without the clay being damaged.[66] The statue and clay may differ with respect to their temporal properties: typically, statues come into existence only after the clay of which they are made. And they also invariably differ in kind: the statue is a statue but the clay is not a statue.[67]

But none of these differences seem poised to serve as wholly satisfactory explanation of the modal differences between the statue and the clay. For instance, there is no plausibility to the claim that the clay is able to survive flattening while the statue is unable to survive flattening *because* the clay but not the statue is well-made, or *because* the clay but not the statue existed yesterday. The difference in kind between the statue and the clay, by contrast, does seem poised to explain their modal difference.[68] But, although it is plausible that the statue cannot survive flattening because it is a statue, while the clay can because it is clay, this difference in kind seems just as much in need of explanation as the modal difference that it is meant to explain. So we have yet to locate explanatory bedrock for this modal difference between the statue and the clay.

The grounding problem is the problem of locating the explanatory bedrock for the modal differences between coincidents. Here, more specifically, is the grounding problem as it arises for the indicated modal difference between the statue and the clay. The fact that the clay can survive flattening while the statue cannot survive flattening appears to stand in need of explanation, and yet there appear to be no further differences

[66] See Fine (2003) and (2006); see Frances (2006) for criticism.
[67] Here I mean that the clay is not a statue in the predicative sense. There may well be a sense of 'is'—the 'is' of constitution—in which the clay is a statue. See Wiggins (1968).
[68] See Burke (1992, 16).

between the statue and the clay that (i) can explain this modal difference and (ii) are themselves "grounded." Further differences are grounded just in case either they do not themselves stand in need of explanation or else they stand in the ancestral of being explained by differences that themselves do not stand in need of explanation. One solves the grounding problem by showing that things are not as they appear. One may contend either that, despite appearances, the modal differences do not stand in need of explanation or that, despite appearances, there is some grounded difference between the statue and clay that is poised to explain their modal difference.[69]

A note about the sort of explanation that is at issue here: In looking for an explanation of the indicated modal differences, we are looking for what one might call a "metaphysical explanation": the reason that, or that in virtue of which, or that because of which, the statue and the clay have the modal features that they do. It is a search for the source, or the ground, for the modal differences. This is to be distinguished from another sort of explanation—what we might call a "conceptual" explanation—which serves to illuminate an unfamiliar concept, and which may be better or worse depending upon the sophistication of the person receiving the explanation. These kinds of explanation come apart, for what is metaphysically prior need not be conceptually prior. For instance, it may be that in (conceptually) explaining what the force of gravity is, one must appeal to its effects, even though the force of gravity (metaphysically) explains those effects.

Let us be careful to distinguish between the grounding problem and the related issue that one who countenances distinct but co-located entities must reject the doctrine

[69] Logical space allows at least one other option, which is to maintain that the modal differences may be explained without appeal to any further difference between the statue and the clay. I will not pursue this line of response.

of microphysical supervenience, namely, that all of a thing's intrinsic properties (including its modal and sortal properties) supervene on the intrinsic properties and relations exemplified by their microphysical parts.[70] Those who deny this supervenience principle may adopt a more global supervenience principle in its place, one that permits microphysically indiscernible items to differ modally.[71] But one can identify a supervenience base for the modal features of the statue and clay without thereby *explaining* why the statue has the modal features that it does while the clay has the ones that it does, rather than the other way round. So the grounding problem remains unsolved even once one finds an amenable principle of microphysical supervenience.[72]

There is a general skepticism in the literature—both among those who do allow for distinct but coincident entities and those who do not—about finding the kinds of differences between the statue and clay that would be needed to solve the grounding problem. Many advocates of distinct coincidents deal with the grounding problem by conceding that the modal differences between the statue and clay do not admit of further explanation; while many opponents of distinct coincidents find brute modal facts to be intolerable. What I will try to show is that the skepticism about finding a ground for the modal features of the statue and the clay is premature and that the proponent of distinct coincidents might be equipped to give a more satisfactory solution to the grounding problem. I will propose three novel ways of solving the grounding problem, each of which involves identifying a grounded difference between the statue and clay. The first involves an alleged difference in the mereological relation that holds between the statue

[70] See Rea (1997a).
[71] See, e.g., Rea (1997b) and Sider (1999a).
[72] Cf. Olson (2001, 342-345).

and its parts and the one that holds between the clay and its parts (§2). The second involves a difference with respect to the de re intentions involved in the creation of the statue (§3). The third involves a difference between what it is for the statue to exist and what it is for the clay to exist (§4).

My main goal, in each case, will be to argue that the indicated differences are explanatorily adequate. To show that the differences are explanatorily adequate requires showing two things. First, I must show that they explain the modal differences (or, alternatively, that they explain the difference in kind, which in turn can explain the modal differences), rather than being explained by them. Second, I must show that these differences do not themselves stand in need of special explanation; they are poised to serve as an explanatory bedrock. Each of the proposals involves controversial background assumptions, and although I do attempt to supply some motivation for accepting these background assumptions, the considerations that I offer on their behalf are not decisive. However, since they all have a certain degree of independent plausibility, simply examining their potential for overcoming the grounding problem should go some way towards advancing the debate. In the final section (§5), I consider the extent to which these proposals can be extended to solve grounding problems involving other kinds of entities.

2. Mereological Pluralism

Mereological pluralism is the view that there is more than one basic parthood relation, and no single, overarching parthood relation under which they are subsumed.[73] If the parthood relation that holds between the statue and its parts is a different relation from the parthood relation that holds between quantities of matter and their parts, then there will a mereological, nonmodal difference between the statue and the clay, which may be poised to ground their modal differences. After a preliminary discussion of the reasons that one might accept mereological pluralism, I examine the prospects for grounding the modal differences between the statue and clay in this kind of mereological difference.

Motivating Pluralism. Perhaps the main reason for accepting mereological pluralism is that fundamentally different kinds of entities differ systematically with respect to their relation to their parts. Masses of matter, for instance, are especially resilient when it comes to the scattering of their parts, but they cannot survive the destruction of any parts. Exactly the opposite is true of individuals (Aristotle's "primary substances"): they can survive the destruction, but not the scattering, of their parts. A straightforward explanation of this fundamental difference in their relation to their parts is that there is a fundamental structural difference between quantities and individuals.[74] The postulation of distinct mereological relations would deliver just such a structural

[73] Mereological pluralism has been endorsed by Richard Sharvy (1983, 235-7), Peter Simons (1987, PPP), Iris, et. al. (1988), and Kris McDaniel (2004, 140-147). See Burkhardt and Dufour (1991, 664-6) for a discussion of Aristotle's mereological pluralism.

[74] Some such criterion for individuating parthood relations is implicit in Fine's argument (1994a, 137f) that aggregation and compounding are different methods of composition.

difference: it is a difference with respect to the very parthood relation that unifies the parts of the relevant entities.

A second reason for being attracted to this kind of pluralism has to do with the systematic differences in our use of mereological vocabulary in connection with quantities and in connection with individuals. We say that the back of the chair is a part of the chair and that the legs are parts of the chair, whereas we say that the wood is part (vs. a part) of the chair and that the chairs are part (vs. parts) of my furniture. This leads some to conclude that the *being a part of* relation is distinct from the *being part of* relation.[75] Relatedly, 'being part of', but not 'being parts of', is interchangeable with 'being some of'. This suggests that the being part of relation must be distinct from the being parts of relation, since one but not the other is identical to the being some of relation. And since there is no sense in which the back is some of the chair, and no sense in which the wood is a part of the chair, there evidently cannot be any one mereological relation under which both of these relations are subsumed.

Third, the apparent counterexamples to the transitivity of the parthood relation may, motivate the adoption of some form of mereological pluralism.[76] For instance, Adam is part of the conga line, Adam's kidney is a part of Adam, but Adam's kidney is not part of the conga line. The tree is part of the forest, the cellulose is part of the tree, but the cellulose is not part of the forest. A proponent of mereological pluralism may hold that the relation denoted by 'part' varies from one premise to the next, that the (merely)

[75] E.g., Sharvy (1983, 235).
[76] Such examples have been widely discussed: see Lyons (1977), Cruse (1979), Sharvy (1983), Simons (1987), Winston, et. al. (1987), Iris, et. al. (1988), Moltmann (1997), Johansson (2004), Johnston (2005), and Varzi (2006).

apparent failure of transitivity is the result of equivocation, and that each of the parthood relations is transitive.[77]

Some may prefer to take the examples at face value—as indicating that the (one) parthood relation is nontransitive[78]—though others feel that the principle of transitivity is so deeply a part of our understanding of parthood that "anyone who seriously disagrees with [it] has failed to understand the word ['part']."[79] I shall not attempt to adjudicate this dispute here. But even those who accept that transitivity sometimes fails may themselves have reason to accept mereological pluralism. For some may be convinced that there are genuine failures of transitivity, yet still wish to secure some domain in which the appeal to transitivity is valid. For instance, one might hold that there is at least *some* mereological relation for which classical extensional mereology (in which transitivity is an axiom) holds.[80] Furthermore, one can explain why transitivity sometimes fails in cases involving the parts of collections and individuals, while it never fails in cases involving masses and their portions or pluralities and their parts, if one holds that different parthood relations—only some of which are transitive—are at work in the different arguments.[81]

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[77] One who holds that there is a single overarching parthood relation is committed to there being a true reading of the conclusions of these arguments (e.g., Varzi 2006). But if there is no such reading—and there seems not to be—this suggests that there is no one parthood relation for which the arguments go through.
[78] See, e.g., Johnston (2005, 645-6).
[79] Simons (1987, 11).
[80] Sharvy maintains that Goodman's calculus of individuals is plausible only as a theory of parthood for quantities, not for individuals (1983, 236). Friederike Moltmann takes the transitivity arguments to show that one who rejects mereological pluralism must also reject extensional mereology (1997, 11).
[81] See Iris, et. al. (1988, 277-80) and Johansson (2004, 162).

Relatedly, by adopting a mereological pluralism, one may preserve another axiom of classical extensional mereology, namely, the principle of extensionality.[82] The principle of extensionality is that objects are identical if every part of one is part of the other, and vice versa: $\forall xyz((x < y \leftrightarrow x < z) \rightarrow y=z)$. A statue and the clay of which it is made, since they are distinct, appear to violate this principle. However, if there is more than one parthood relation—say, $<_m$ for masses and $<_i$ for individuals—then one who holds that the statue and clay are distinct is free to hold that something is part (i.e., $<_m$) of the clay iff it is a part (i.e., $<_i$) of the statue and that the relevant principles of extensionality hold for each of these relations (i.e., $\forall xyz((x <_m y \leftrightarrow x <_m z) \rightarrow y=z)$ and $\forall xyz((x <_i y \leftrightarrow x <_i z) \rightarrow y=z)$). Or, alternatively, one may hold that the former but not the latter is correct, which would at least secure some parthood relation to be the subject matter of classical extensional mereology.

Finally, one might take there to be an abductive argument in support of the mereological pluralism. For, in the absence of superior accounts of what grounds the modal differences between the statue and the clay, one may postulate the distinct parthood relations as the best explanation of how the statue and clay are able to differ modally. This may seem to be putting the cart before the horse, but bear in mind that comparable arguments are needed by proponents of other accounts of material constitution. For instance, those who hold that the statue and clay are identical must hold that such seemingly transparent contexts as '___ is well-made' are in fact opaque in order to explain why names for the statue and the clay are not interchangeable in such contexts.

[82] Thanks to Josh Dever for helpful discussion of this point.

But there evidently is no independent evidence that these contexts are opaque, beyond the fact that they must be if the names of the statue and the clay are indeed coreferential.[83]

Explanatory Adequacy. Having examined some reasons for accepting mereological pluralism, let us suppose that there indeed are different parthood relations for masses and individuals, and now consider whether mereological pluralism has what it takes to solve the grounding problem. In particular, we need to determine both whether it is plausible that the envisaged mereological difference can serve to *explain* the difference in kind and, in turn, the modal differences between the statue and clay, and whether it is plausible to treat the mereological differences as explanatory bedrock.

First let me head off a certain confusion. Some might object that the envisaged mereological differences cannot possibly ground the modal differences between the statue and clay, for there is evidently no way to explain what the difference is between the different parthood relations except in terms of the modal and sortal features of the relata (e.g., that things standing in the part_m relation to their parts are masses, and they can survive the scattering of their parts but cannot survive the loss of any parts). The proposal may then appear circular, since I am meant to be explaining the modal and sortal differences in terms of the mereological differences.

But this is to conflate the two kinds of explanations mentioned in the previous section. When one introduces an entity as a theoretical posit, either in science or in philosophy, it is neither illicit nor uncommon to characterize (i.e., supply a *conceptual* explanation of) the entity in terms of the phenomena that it is invoked to explain (i.e., *metaphysically* explain). This does not reveal the posit to be in any way circular or

[83] See Fine (2003) and (2006).

explanatorily impotent. On the present account, one cannot analyze or explain (in the metaphysical sense) mereological differences in modal or sortal terms; rather these differences are meant to be understood as metaphysically primitive, explanatory bedrock. But this is wholly compatible with its being possible to illuminate the concepts of being a $part_i$ or $part_m$ only by appeal to familiar modal and sortal features of the kinds of things that stand in the different parthood relations.

Having now headed off this worry about circularity, we still must consider whether (i) the difference in kind is indeed plausibly explained in terms of the mereological differences, rather than the other way round, and (ii) whether the mereological differences can plausibly be treated as explanatory bedrock. To try to get a better handle on the explanatory adequacy of this proposal, let us turn our attention to the grounding problem as it applies to abstracta. Consider, for instance, the set whose members are the property of being red and the property of being round: {being red, being round}. There is a sense in which this set has the same components as the conjunctive property of being red and round. Just as with the statue and clay, there appears to be a difference in kind without any difference in components. And if the difference in kind between the statue and clay stands in need of further explanation, so presumably does the difference in kind between the set and the property.

(Some, following Lewis 1991, might deny that there is any sense in which the indicated set has those two properties as components, on the grounds that it in fact is built up out of its subsets, not its members. Alternatively, some might deny that the two items differ in kind, on the grounds that properties just are sets of a certain sort. The example is dispensable, however, for other grounding problems may be generated by considering (in

various combinations) the differences between the indicated set and conjunctive property, the disjunctive property of being red or round, the ordered pair <being red, being round>, the sum of being red and being round, and the disjunctive property of being {being red} or being {being round}. Or one might consider the grounding problem concerning the difference between the disambiguations of syntactically ambiguous sentences, or the differences between words built up out of the same letters.)

In virtue of what, then, is the indicated set a set, rather than a conjunctive property? One natural reaction is to say that the set is a set rather than a conjunctive property because it stands in the having as a member relation to its components, as opposed to the having as a conjunct relation. It is the kind of thing that it is because of the structural relation that it stands in to its components. But why (one might ask) does the set stand in the having as a member relation to its components, rather than the having as a conjunct relation? No answer presents itself.[84] But perhaps that should not trouble us, for all explanation must end somewhere, and surely the lack of further explanation in the present case should not lead us to worry about the existence and distinctness of the indicated property and set. Moreover, it seems perfectly reasonable to take this appeal to the structural relations that the relevant items bear to their components to be explanatory bedrock. But if it is reasonable to treat structural relations as explanatorily basic in the case of sets and properties then, by parity, it ought to be reasonable to treat structural relations as explanatorily basic in the case of the statue and clay as well. That the statue stands in the part_i relation to its parts seems to be on a par, with regard to explanatory

[84] Actually, one might suggest that this structural difference can be explained on the basis of differences with respect to what it is for the respective entities to exist. One might then hold that the mereological differences and other differences between the statue and clay may be explained in like manner. I explore this possibility in the §4.

power, with the fact that the set stands in the having-as-a-member relation to its components.

In fact, it is hard to find any other difference between the set and property that could serve to solve their grounding problem. One might suggest that what grounds the difference in kind between the conjunctive property and the set is that the former can be instantiated while the latter cannot, and that this is explanatorily basic. But this would be to ground the difference in kind in a modal difference, and if this is legitimate in the present case (which presumably it is not), then by parity it must be legitimate to take the modal differences between the statue and clay to be basic as well.[85] Alternatively, one could hold that the difference in kind between the set and conjunctive property is explanatorily basic and explains both the modal differences between the two and the difference in the relations that they bear to their components. But, again, differences in kind are meant to stand in need of further explanation, so if this is not legitimate in the case of the statue and clay, it is not legitimate here either.

What this shows is that if one is too stingy about the sorts of differences that can reasonably be treated as explanatory bedrock, then one is left without a solution to the grounding problem for abstracta. And, since grounding the differences between sets and properties in structural differences seems at least plausible (and perhaps unavoidable), we have at least some reason for thinking that mereological differences are poised to explain the relevant differences among coincident concreta as well.

[85] In any case, this solution will not extend to a grounding problem involving uninstantiable conjunctive properties (e.g., the property of being red and blue) and the associated sets.

3. Creative Intentions

The artifactual kind (if any) to which an item belongs is not entirely determined by its intrinsic properties. A quantity of clay that, entirely by chance, is a qualitative duplicate of the statue that I just made is not itself a statue, nor does it have the persistence conditions associated with statues. Something cannot be a statue without someone's having intended for it to be a statue. If differences with respect to creative intentions can explain why the item that I made is a statue while its physical duplicate light years away is not, perhaps creative intentions can also be employed to ground the differences between the statue and the physically indiscernible lump that shares its location. In the present section, I explore the prospects of extending this explanation of the differences between disjoint entities to the case of coincident entities.

The idea of grounding modal differences between statues and clay in differences in their extrinsic features is not a new one, but many solutions in this vein do not survive scrutiny. For instance, while it is true that one may admire a statue without admiring the clay that constitutes it, the fact that the statue (but not the clay) is admired certainly does not *explain* why it is a statue or why it cannot survive being flattened—if anything, that you admire it is, at least in part, explained *by* the fact that it is a statue. De dicto creative intentions are likewise unable to ground the modal differences between the statue and clay. This is especially clear in cases in which the statue and clay are created simultaneously. For, in those cases, it is true of both the statue and the clay that they came into existence as a result of my intention to create a statue. My de dicto intention to

create a statue therefore fails to differentiate them and, consequently, does not supply a difference upon which to ground their modal differences.[86]

De Re Intentions. De re intentions, on the other hand, can serve to differentiate the statue and the clay, and (for better or worse) have an ineliminable role to play in the present account. As in the case of de dicto intentions, it may be that the statue and the clay both come into existence as a result of my de re intention with respect to the statue (call it 'Goliath'; and call the clay 'Clay') that it be statue. But, unlike the de dicto intention to create a statue and to make some clay, the de re intentions yield other properties with respect to which Goliath and Clay do differ. I intend with respect to Goliath that it be a statue. But I do not intend with respect to Clay that it be a statue. I intend that it make up a statue, but not that it be a statue (in the predicative sense). The proposal would then be that the *reason* that Goliath is a statue is that, when I made it, I intended for it to be a statue. That is, I had a de re intention, with respect to Goliath—before and during its construction—that it be a statue.

Is it possible to have such de re intentions? There are two sorts of worries that one might have. The first is a general problem concerning the possibility of standing in relations to things that do evidently not exist. This is a problem that rears its heads in the literature on fictional entities, since one can think about Sherlock Holmes or look for Sherlock Holmes, even though Holmes evidently does not exist. Relatedly, one can admire Lincoln, even though he evidently is not around to be admired. This is meant to be a serious problem for presentists in the philosophy of time.

[86] There is a difference in the vicinity: the statue, but not the clay, vindicates my de dicto intention to create a statue. But surely it vindicates my intention *because* it is a statue. So its vindicating my intention cannot explain why it is a statue.

There are various ways of answering these worries. One might follow eternalists in the philosophy of time in holding that the statue that I intend to create is a future object and that future objects are no less real than present objects.[87] One might follow anti-existentialists in holding that one does not have to stand in any relation to Goliath in order to have that de re intention; one needs only to stand in some relation to its haecceity or its essential individuating property.[88] One might follow neo-Meinongians in holding that the statue does not have to exist in order for one to stand in relations to it.[89] Or one might follow Williamson in holding that, even prior to its creation, the statue *does* exist, but that it is an abstract object at those times.[90] I will not take a stand on which of these is the correct view; the point is just that there are various ways of dealing with this problem, and one who is willing to take any one of these lines may well be in a position to solve the grounding problem.

The second problem with having de re intentions toward the future statue has to do with singling it out uniquely in advance of its creation. This is related to the familiar Quinean worry about thinking about some possible bald man in the doorway; there are simply too many indiscernible possible bald men in the doorway and no way to get one of them uniquely in mind. Similarly, one might worry that there are too many possible statues that look just like the statue I intend to create in order to get one of them uniquely in mind.

There is reason to think that this can be done, however. Consider a sperm and an egg cell that are about to unite. Plausibly, there is a unique zygote that will result from

[87] See, e.g., Sider (2001).
[88] See, e.g., Plantinga (1974).
[89] See, e.g., Fine (2005).
[90] See, e.g., Williamson (2002).

their union, and we can talk about and think about this zygote.[91] Likewise, as I begin to work on the clay, there is a unique statue that will result from my present creative act.[92] Supposing that it is possible at least in general to have propositional attitudes towards things that do not presently exist, there seems to be no obstacle to intending for it (i.e., this future statue) to be eight feet tall, to be beautiful, and to be a statue. No explicit stipulation or baptismal ceremony is required, but only the tacit intention that the thing I am about to create be a statue; this is important, for my claim is not just that this is something that *can* happen, but that this is typically what happens when artifacts are made. And it is not implausible that creators generally have the requisite de re intentions towards their creations, at least tacitly.

Explanatory Adequacy. Let us suppose that it is possible to have the requisite de re intentions. If the difference in kind between Goliath and Clay can be grounded in the fact that one, but not the other, is the object of a de re statue-creating intention, their modal differences can then be explained in terms of this difference in kind, thereby solving the grounding problem. So let us now investigate whether these intentions are in fact eligible to explain the difference in kind between Goliath and Clay, and whether this difference with respect to creative intentions itself stands in need of special explanation.

The main worry about the explanatory adequacy of this proposal is that it involves a vicious circularity. As indicated above, my de re statue-creating intention is about Goliath because Goliath is the statue that will result from my present creative act. But Goliath is meant to be a statue as a result of my de re intention that it be a statue.

[91] Cf. Salmon (1987, 49-50) and Kaplan (1973, 517).
[92] Those who wish to avoid commitment to possible objects will presumably have some way of paraphrasing away this apparent quantification over possibilia.

Arguably, however, there is no genuine circularity. Compare this to the following apparent circularity, which most will agree is merely apparent. Suppose that Adam poisons Bill, and Bill dies. Bill dies because Adam murdered him. But Adam's action was a murder (rather than a mere poisoning) because Bill ended up dying. It seems that the right thing to say here is that there are two notions of explanation at play—perhaps something like Aristotle's notions of efficient causation and formal causation. The murder brings about the death, but the subsequent death makes it the case that it was a murder. The present proposal is structurally similar. Goliath is a statue because I intended for it to be a statue. But what makes it the case that my statue-creating intention is an intention about Goliath is that Goliath is the statue that will result from my present creative act. So there is no circularity here; there are explanations running in opposite directions, but they are explanations of different kinds.

If this is correct, then things go relatively smoothly in showing that the proposal is explanatorily adequate, so long as it is possible in general to have the requisite kinds of de re intentions. Regarding whether the differences with respect to creative intentions can serve as ultimate ground for the difference in kind between the statue and the clay, the fact that we have the creative intentions that we do presumably is not itself explanatory bedrock, but it is close enough, and there should simply be a mundane psychological explanation for why we have the creative intentions that we do. The other question is whether the proposal gets the order of explanation the right way round. I need it to be the case that Goliath is a statue because I intended that it be a statue, and not that I intended that it be a statue because it is a statue. But it should just be obvious that this is the correct order of explanation. First of all, there is a genuine prima facie plausibility to the

claim that Goliath is a statue because I intended for it to be a statue. Second, since my creative intentions pre-date the statue, it seems that there is no possibility of the difference in kind explaining the difference in intentions.[93]

4. Definitional Differences

Let us now turn to one last way of grounding the modal differences between statues and quantities of clay. The idea is that the statue and the clay differ with respect to what it is for each of them to exist, that is, they differ with respect to their *real definitions*. The key will be to show that, if indeed there are such definitional differences between the statue and the clay, these differences are poised both to explain the modal and sortal differences between the statue and the clay, and that they can plausibly be treated as explanatory bedrock.[94]

Many will resist the thought that objects other than words and concepts have definitions. But it is a traditional view, going back at least as far as Aristotle (in his Posterior Analytics), that there can be real, or objectival, definitions. Moreover, it is not obvious whether there are any nonarbitrary grounds for ruling out real definitions while

[93] However, this solution will not be available to one who (like Williamson 2002) thinks that Goliath exists prior to its being made and (unlike Williamson) that Goliath is a statue prior to its being made. Nor will it be available to one who (like Fine 2005) thinks that Goliath is a statue prior to its existence.

[94] Bennett (2004, 354-5) proposes a solution to the grounding problem that bears a superficial similarity to the present proposal, insofar as it appeals to the identities of the objects in question, though her solution differs from mine in that (a) it requires the truth of a highly controversial "plentitudinous" theory of coincident objects, and (b) it purports to solve the grounding problem by denying that the modal differences stand in need of explanation (as opposed to identifying a grounded differences between the objects in question).

countenancing definitions of concepts.[95] Nevertheless, perhaps there is some good reason for resisting real definitions. My intention is only to show that if there are such definitions (as many already think), they can be exploited to solve the grounding problem; this should be of independent interest even to those who doubt that there are real definitions.

A real definition of an object specifies what it is for that object to exist. Following Mark Johnston, we might understand the real definition of a complex entity as specifying the parts of the entity and the "principle of unity" for those parts.[96] For instance, what it is for this hydrochloric acid molecule to exist is for this hydrogen ion and this chlorine ion to be covalently bonded together. By contrast, being covalently bonded is no part of what it is for the sum of the hydrogen and chlorine ions (assuming there really is such a thing) to exist.[97] So despite being co-located and physically indiscernible, the sum and the molecule have different principles of unity.

It will be more difficult to specify the principles of unity of the statue and the clay.[98] But to the extent that there is something that there is for each of them to exist, and what it is for the one to exist is different from what it is for the other to exist, they will

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[95] "The difficulty with the position is to see what is so special about concepts. It is granted that the concept bachelor may be defined as unmarried man; this definition states … what the concept *is*. But then why is it not equally meaningful to define a particular set in terms of its members or to define a particular molecule of water in terms of its atomic constituents? Why is the one any more a definition or account of what the object is than the others?" (Fine 1994b, 14). See also Benardete (1993, 275) who maintains that real definition is presupposed by conceptual analysis.

[96] Johnston (2005, 638).

[97] Johnston (2002, 133-6).

[98] As an oversimplified, first attempt, Johnston (2002, 136-7) suggests that what it is for the copper statue of a bull to exist is for the copper head-shaped part to be attached to the front end of the copper torso-shaped part and for the copper tail-shaped part to be attached to the rear end of the copper torso-shaped part.

have different definitions. Among other things, the statue but not the clay will be defined in terms of its form: part of what it is for it to exist is for its parts to take on that form. The question, then, will be whether these definitional differences can serve as a solution to the grounding problem.

Explanatory Adequacy. On the present proposal, the reason that the hydrochloric acid molecule cannot survive the scattering of its parts is that part of what it is for it to exist is for the two ions to be covalently bonded. Since what it is for the sum of the ions to exist in no way involves their being bonded together, it is possible for it to survive the scattering of its parts. Likewise, because part of what it is for the statue to exist is for it to have (at least roughly) the form that it does, it cannot survive flattening, while the clay can survive flattening because having this or that form is no part of what it is for it to exist.

One might object that this proposal is not explanatorily adequate, for definitional differences are themselves modal differences, the idea being that definition is itself a modal notion. If so, then we have failed to meet our stated goal of identifying a nonmodal difference between the statue and the clay to ground their modal differences. Arguably, however, the notion of definition is not a modal notion, insofar as it cannot be analyzed in modal terms.[99] As Fine has observed, it is a necessary feature of Socrates that he be the

[99] Another way of understanding the complaint that definition is a modal notion is that something's being a definition has modal consequences (e.g., that it is necessary). But this cannot be right, since something's being a tautology has modal consequences as well, but plainly tautology is not a modal notion in any interesting sense (see Bealer 2006, 27). Moreover, if something's having modal consequences rules it out from serving as a ground for modal differences, then the project of grounding modal differences is trivially doomed from the outset.

sole member of {Socrates}, but this is in no way part of what it is to be Socrates.[100] So, although it is true that, necessarily, Socrates = the unique element of {Socrates}, it is not the case that Socrates is, by definition, the unique element of {Socrates}. Modal notions are therefore too coarse-grained to serve as an analysis of definition.[101]

One might still worry that no progress has been made, for if facts about how a thing must be and can be stand in need of explanation, then so presumably do facts about what it is for a certain thing to exist. Even if one can explain the modal differences between the statue and the clay in terms of what it is for the statue to exist and for the clay to exist, one still must explain why *this* is what it is for the statue to exist, while that is what it is for the clay to exist, rather than the other way around. So, arguably, we have not yet reached explanatory bedrock.

To see that progress has been made, let us turn our attention to a somewhat different example. Suppose for the moment that, on final analysis, knowledge turns out to be justified defeaterless belief. Now consider the question: why is knowledge justified defeaterless belief, rather than justified true belief? It would be a mistake to try to explain the fact that knowledge is not justified true belief by appeal to the fact that (Gettier's character) Smith has justified true belief and yet does not know, for this seems to get things the wrong way round and, anyway, would deprive us of a noncircular explanation

[100] Fine (1994b, 4-5).
[101] George Bealer makes this point in (2006, 38). He also observes that, whatever its other shortcomings, no one has ever objected to the analysis of modality in terms of truth by logic and definition on the grounds that it is circular (2006, 27-8). But the charge should be legitimate if definition truly is a modal notion.

of Smith's lack of knowledge. Rather, it appears that there is (and need be) no answer to this question.[102] Knowledge *just is* justified defeaterless belief.

Why is this an acceptable stopping point? Evidently, the relevant feature of the explanation that allows it to serve as explanatory bedrock is that it specifies *what it is* for there to be knowledge. It is in virtue of its status as a definition that it enjoys the status of explanatory bedrock. By parity, the appeal to what it is for the statue to exist and for the clay to exist is also a suitable stopping point, since they share the feature of the appeal to what knowledge is in virtue of which the latter is a suitable stopping point—namely, invoking a definition. (Of course, the case of knowledge and the case of the statue and clay are disanalogous in various respects. But they are analogous in the sense that matters, in the sense that is relevant to their explanatory status.) So it seems that we have indeed made progress by appealing to the definitions of the coincident entities.

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[102] Perhaps there is some temptation to say that the reason that knowledge is not justified true belief is that Smith has a justified true belief that the man who gets the job has ten coins in his pocket and yet does not *know* that the man who gets the job has ten coins in his pocket. I suspect that this is again based on a conflation of metaphysical and conceptual explanation. This is a good explanation only insofar as it illuminates why knowledge must not be justified true belief, but that is just to say that it is a good conceptual explanation. As a metaphysical explanation, however, it seems to get things the wrong way round.

Alternatively, one might suggest that knowledge is justified defeaterless belief because of the meaning of 'knowledge'. But, while this may be a plausible explanation of the truth of the *sentence* 'Knowledge is justified defeaterless belief', it does not explain the fact that knowledge is justified defeaterless belief. First, the correct explanation seems to go in exactly the opposition direction: 'knowledge' means what it does because it denotes knowledge and knowledge is justified defeaterless belief. Second, since explanations support counterfactuals, the fact that a certain English word has a certain meaning cannot explain why knowledge is justified defeaterless belief—for had the word meant something else, or had it never existed, it still would have been the case that knowledge is justified defeaterless belief. Finally, it cannot be the case that knowledge is justified defeaterless belief because of the meaning of some particular word, because there is no principled means of selecting that word: 'knowledge'? 'savoir'? 'conoscenza'?

5. Extending the Solution

Let us now consider whether, and to what extent, the various solutions can be extended to handle versions of the grounding problem involving other kinds of entities. As we will see, the pluralist solution and creative intentions solution cannot cover all of these grounding problems—at least not without adopting fairly radical versions of those proposals. But that does not by itself show that the proposals are inadequate or uninteresting. First, it is not obvious that different grounding problems involving different kinds of entities require a uniform solution, nor is it obvious that, because (say) mereological differences sometimes cannot explain modal differences among coincidents, they cannot ever explain such differences. Second, some might deny that all of the instances of the grounding problem mentioned below are genuine. Third, even if radical versions of the proposals are required to handle some of the cases, this may (on final tally) prove less costly than its alternatives (e.g., brute modal facts, eliminativism, contingent identities).

Low-Grade Individuals. In addition to the statue and the clay, there is also the lump of clay, which seems to differ modally from both the statue and the clay. Unlike the statue, the lump of clay can survive being squashed; unlike the clay, the lump cannot survive the scattering of its parts. Some may doubt that these items do indeed differ modally,[103] but let us suppose that they do. What, then, grounds these modal differences?

To handle this case by appeal to different parthood relations, one would need a more extensive pluralism than the one considered above which distinguished only two

[103] For instance, on the dominant kinds view defended in Burke (1994) and Rea (2000), there are no modal differences between coincident statues and lumps.

parthood relations: one for masses and one for individuals. But now one would need to postulate two different parthood relations for individuals: one for high-grade individuals like statues, trees, and tables, and another for low-grade individuals like lumps, chunks, hunks, and pieces (i.e., things which constitute the high-grade individuals). But it is only natural to extend the pluralist proposal to cover the present case. One of the main motivations for multiplying parthood relations in the first place was that fundamentally different kinds of things differ systematically with regard to their relations to their parts. Low-grade individuals seem to occupy a middle ground between masses and more sophisticated individuals like trees and statues: unlike masses they cannot survive the scattering of their parts, and unlike high-grade individuals, they can survive arbitrary rearrangements of their parts. So it seems natural for the pluralist to postulate a further parthood relation, specific to primitive individuals, and this could ground the modal differences between the lump and the statue, and also the modal differences between the lump and the clay.

The definitional solution has no trouble with this case either, since what it is for the lump to exist will be different from what it is for either the clay or the statue to exist.[104] So one may appeal to definitional differences to solve these grounding problems as well. The appeal to creative intentions, however, cannot plausibly be extended to this case. For what is plausible in the case of artifacts—namely, that they depend for their nature and existence on our conceptual activity—is patently implausible in the case of nonartifacts such as lumps. Plausibly, our conceptual activity has nothing at all to do with

[104] Roughly, what it is for the lump of clay to exist will be for the various bits of clay to be "joined and connected" in the relevant way. See Hoffman and Rosenkrantz (1997, 80-90) for an attempted explication of the relevant notion of being joined and connected.

the modal and sortal features of animals, mountains, or puddles (though this extreme view is not without its defenders).[105] So the appeal to creative intentions is best treated as only a partial solution to the various grounding problems.

Same-Kind Co-location. Bruce is away on business and in a drunken stupor he writes the following letter to his wife: "Dear Bertha, I'm leaving you. Love, Bruce." Bertha receives the letter several days later, and writes the following letter to Bruce on the back: "Dear Bruce, I'm returning your horrible letter. Good riddance, Bertha."[106] The letter that Bruce wrote and the letter than Bertha wrote coincide exactly, on the 8½ x 11 piece of hotel stationary. But it seems that they must be distinct. Among other things, one was written before the other. Furthermore, they seem to differ modally: if one erases Bruce's inscription, Bruce's letter but not Bertha's letter ceases to exist. And this modal difference seems just as much in need of grounding as any other modal difference.

Some might doubt that this is a genuine case of co-location,[107] but let us suppose that it is. The pluralist solution seems like a nonstarter here, unless one is willing to accept a radical version of pluralism on which parthood relations vary even from one letter to the next, even amongst things of the same kind; and this looks to be an unpalatable and unmotivated extension of pluralism. So, as with creative intentions, mereological pluralism is best viewed as only a partial solution to the various grounding problems.

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[105] The most explicit proponent of the conceptualist view is Alan Sidelle (1989).
[106] This is a slightly modified version of an example from Kit Fine (2000, 359-60). See Johnston (2005, 661-3) for discussion of a related example.
[107] To my knowledge, no objections have been raised in the literature, though one often hears it said that the two letters are *abstract* entities, and that the case involves only one concrete item (with writing on both sides of it).

The appeal to creative intentions, by contrast, is well equipped to handle this case. Bruce intended with respect to his letter that it convey that he is leaving Bertha, which is why Bruce's letter cannot survive the destruction of the words 'Dear Bertha, I'm leaving you', whereas it can survive the destruction of the words 'Dear Bruce, good riddance'. Exactly the opposite is true of Bertha's letter because she intended with respect to hers that it convey an angry reply. And the definitional response is available here as well, insofar as what it is for Bruce's letter to exist is different from what it is for Bertha's letter to exist. As before, it is difficult to specify the definitions for these items, but they will differ at least in the following respect: part of what it is for Bruce's letter (but not Bertha's letter) to exist is for the words 'Dear Bertha, I'm leaving you…' to be inscribed on the paper in the relevant order.

Persons and Bodies. Finally, there is the case of persons and their bodies, which seem physically indiscernible and yet modally different. Arguably, a person can survive the death of his body, for instance by having his brain transferred to another body, and perhaps in more exciting ways. Again, let us simply grant that a person and his body do differ modally.[108] This gives rise to an especially difficult instance of the grounding problem. As in the other cases, the definitional solution is equipped to handle the problem (since what it is for a person to exist will presumably involve psychological facts in a way that what it is for a body to exist does not). But the appeal to creative intentions appears to be a nonstarter since, as before, there are no artifacts involved in this case. And, while one might multiply parthood relations further in order to accommodate this case, it is unclear whether this more extensive pluralism can be motivated.

[108] See Thomson (1997) for defense of a bodily criterion of personal identity on which persons and their bodies have the same persistence conditions.

However, even if this more extensive pluralism is untenable, it may still be possible to explain the modal differences between persons and their bodies in terms of mereological differences between the two. A number of philosophers have defended the view that persons, unlike their bodies are mereologically simple.[109] David Barnett, for instance, argues that the mereological simplicity is required in order for an individual to be capable of thought. If this is correct then, since the capacity for thought is tightly connected to the persistence conditions for persons, it is plausible that the mereological simplicity of persons and the mereological complexity of their bodies has a role to play in explaining why they have the persistence conditions that they do.[110] So one would still have a fundamentally mereological solution to this grounding problem.

6. Conclusion

I have explored three avenues for grounding modal differences between coincident entities: first, in terms of mereological differences; second, in terms of differences with respect to creative intentions; third, in terms of differences in their real definitions. My main focus has been to establish that the proposed solutions are explanatorily adequate given certain background assumptions. I have tried to demonstrate that the indicated differences are suited to explain modal differences (and are not explained *by* them) and that those differences do not themselves stand in need of further explanation. A full defense of the proposed solutions would require a deeper investigation into those background assumptions, that is, the motivations and potential

[109] See, e.g., Chisholm (1991), Quinn (1997), Lowe (2001), Zimmerman (2003), and Barnett (forthcoming)
[110] Barnett (forthcoming).

scope of mereological pluralism, the possibility of having de re intentions toward individuals that do not presently exist, the ontological status of such individuals, and the existence and nature of real definitions. But, even having left these background issues unresolved, it looks as though a satisfactory solution to the grounding problem may be within reach. In fact, perhaps the most important problem facing those who hold that coincident entities can differ modally is not a poverty of differences but rather an embarrassment of riches: for, given the correctness of the background assumptions, one must somehow determine which among the candidate explanations is *the* explanation of their modal differences.

IV

Ordinary Objects Without Overdetermination*

1. The Exclusion Argument

Trenton Merricks argues that a wide range of the material objects that we ordinarily take to exist do not in fact exist, on the grounds that they lack nonredundant causal powers. The argument, as it applies to baseballs, may be understood as follows:

1. If baseballs exist, then baseballs have causal powers.
2. For all x, x has causal powers only if it is possible that, for some event e, x causes e.
3. So, if baseballs exist, then it is possible that, for some event, some baseball causes it.
4. Necessarily, for every baseball, and for every event e, either the atoms that compose the baseball (collectively) cause e or the atoms that compose the baseball do not (collectively) cause e.
5. Necessarily, for every baseball and event e, if the atoms that compose the baseball cause e, then the baseball does not cause e.[111]
6. Necessarily, for every baseball and event e, if the atoms that compose the baseball do not cause e, then the baseball does not cause e.
7. So, necessarily, for all baseballs and events e, the baseball does not cause e.
8. So baseballs do not have causal powers.

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* Thanks to George Bealer, John Bengson, Dave Robb, and Mark Sainsbury.

[111] The argument for (5) runs as follows: (5a) Necessarily, for all objects o, objects $o_1 \ldots o_n$, and events e, *if* $o_1 \ldots o_n$ cause e and o is causally irrelevant to whether $o_1 \ldots o_n$ cause e and e is not overdetermined by o and $o_1 \ldots o_n$, *then* o does not cause e. (5b) Necessarily, for all events e, no baseball is causally relevant to whether the atoms that compose it cause e. (5c) Necessarily, no event is overdetermined by a baseball and the atoms that compose it. (5) So, necessarily, for every baseball and event e, if the atoms that compose the baseball cause e, then the baseball does not cause e. See Merricks (2001, 56-73).

9. So baseballs do not exist.

Arguments for the elimination of other kinds of entities may be obtained by substituting other kind terms for 'baseball' throughout.[112]

Merricks denies that persons can successfully be eliminated by this kind of argument, on the grounds that persons can cause things to happen that are not caused by their constituent atoms acting in concert.[113] If persons do indeed have nonredundant causal powers, then the sixth premise of the argument as it applies to persons is false. In what follows, I defend the view that baseballs themselves have nonredundant causal powers. There is a division of causal labor: macro-events are typically caused by macroscopic objects and microscopic events are typically caused by microscopic items. Let us call this kind of division of labor *specialization*.

There are, of course, other ways of resisting the elimination of baseballs. One might deny (1) and concede that baseballs are mere epiphenomena. One might deny (5) on the grounds that the baseball is identical to the atoms of which it is composed, in which case it trivially causes everything caused by those atoms.[114] Or one might deny (5) on the grounds that everything that happens as a result of the activities of the atoms that compose the baseball is systematically overdetermined by the baseball.[115] I will not argue that these responses are incorrect. Presumably, however, a view on which baseballs and the like have a causal impact that is not systematically overdetermined is to be preferred,

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[112] Merricks takes his argument to work only against material objects, insofar as his defense of premise (1) invokes only a restricted version of Alexander's dictum, according to which macroscopic objects exist only if they have causal powers (2001, 81).
[113] Merricks (2001, chapter 4).
[114] The immediate problem is that the baseball and the atoms differ modally, in which case they must be distinct (by Leibniz's Law). See Merricks (2001, 20-28) for further discussion of this line of response.
[115] See Sider (2003) and Thomasson (manuscript).

other things being equal; and there are good reasons for resisting the identification of the baseball with the atoms.

2. The Granularity of Events

I contend that the baseball causes the shattering of the window but not the scatterings of the atoms arranged windowwise, while the atoms arranged baseballwise cause the scatterings of the atoms but not the shattering of the window. This is coherent only if the shattering of the window is distinct from the scatterings of the atoms. So the proponent of specialization must hold that events are sufficiently fine-grained if there is to be causal work for both the atoms and the baseball. Of course, it is tempting to hold a more coarse-grained view of events, according to which 'the window shattering' and 'the atoms scattering' are two descriptions of a single event.[116] But this is besides the point, for the defender of the exclusion argument is in no position to deny that events are fine-grained.

To see why, let us begin by considering some objects that the defender of the exclusion argument does believe in, for instance, atoms arranged baseballwise.[117] Defenders of the exclusion argument must somehow allow for events to be caused both by the atoms and by the events involving those atoms (e.g., the atoms arranged baseballwise colliding with the atoms arranged windowwise). Otherwise, the exclusion argument can be adapted to show that events involving those atoms cannot exist, for there

[116] Incidentally, Merricks himself concedes that these are distinct events. He reasons as follows: the shattering is a single event and the scatterings are not a single event, so by Leibniz's Law they must be distinct (2001, 64). Perhaps not all defenders of the exclusion argument will be so easily convinced.

[117] For those nihilists who believes in nothing, a different argumentative strategy is required (one which will crucially involve an incredulous stare).

could never be anything for those events to cause that is not already caused by those atoms. This point generalizes to all events: they cannot do anything that is not already being done by their constituents. But if there can be no events, then nothing can cause anything to happen, in which case nothing has causal powers, including the atoms arranged baseballwise. But if the atoms arranged baseballwise lack causal powers, then they do not exist, contra hypothesis.

In order to avoid eliminating everything, the defender of the exclusion argument must hold that the atoms and their activities are not in causal competition—that this kind of overdetermination is unobjectionable.[118] However the details might go, the general idea will have to be that all of the *real* causal work that needs to be done is done by events, and that allowing object causation does not multiply causes because of the tight (perhaps analytic) connection between object causation and event causation—for instance, objects cause events *by virtue of* participating (in the appropriate way) in events that cause those events.[119] Let us suppose that this is so.

Now suppose that events are so coarse-grained that the baseball's colliding with the window is identical to the atoms arranged baseballwise colliding with the atoms arranged windowwise. Call that event 'E'. The baseball causes the window to shatter by virtue of participating in the event of the baseball colliding with the window, namely, E. The atoms arranged baseballwise cause the window to shatter by virtue of participating in the event of the atoms arranged baseballwise colliding with the window, namely, E. So

[118] Specifically, he must deny the fifth premise of the exclusion argument against events: (5') Necessarily, for all events e and e', if some object causes e', then e does not cause e'.
[119] Cf. Merricks (2001, 67-8). Of course, the defender of the argument must ensure that the explanation does not generalize to show that overdetermination by objects and their parts is unobjectionable—lest they undermine premise (5) above—but let us just suppose that this can be done.

both the causal work done by the baseball and the causal work done by the atoms are analyzed in terms of the causal work done by E. And, by hypothesis, events do all of the real causal work. So, on the hypothesis that events are coarse-grained, the overdetermination of the window shattering by the baseball and its atoms would be an unobjectionable kind of overdetermination, in just the same way that the overdetermination of the window shattering by the baseball and the associated event is unobjectionable—namely, insofar as there is really only one thing doing any causal work.

So, on pain of self-defeat, the defender of the exclusion argument must concede that the baseball colliding with the window and its atoms colliding with the window are distinct events. By parity, so must be the window shattering and the atoms scattering. Therefore, no questions are begged in assuming that these are distinct—for if they are identical, then the exclusion argument is toothless. I will likewise continue to assume that object causation may be analyzed in terms of event causation—for, as we have just seen, the defender of the exclusion argument is in no position to deny this.

3. Baseballs Shatter Windows

I deny (6) on the grounds that baseballs and the like have nonredundant causal powers. Baseballs cause windows to shatter. When a baseball shatters a window, the atoms that compose the baseball do not cause the window to shatter. They do cause atoms arranged windowwise to scatter, but that is about it. The point generalizes. For every macroscopic object, some hooligan in some world has found a way to shatter a window with it. So they all have causal powers in the sense required by premise (2). And since the

atoms that compose them succeed only in scattering atoms arranged windowwise, the activities of those atoms do not generate any causal redundancy.

This is not to deny that it is *possible* for atoms arranged baseballwise to shatter a window. There are worlds in which, purely by chance, atoms converge in a baseballwise arrangement just long enough to collide with a window, shatter it, and then disperse.[120] Plausibly, those atoms do not compose a baseball, or anything else for that matter.[121] But *something* shattered the window. So it must have been those atoms.[122]

This suggests that, when a baseball shatters a window, the activities of the atoms that compose it are causally sufficient for the shattering. For had the atoms done what they did in the absence of the baseball, the window still would have shattered. But causing and causally necessitating are two different things. What the atoms did necessitated the shattering but did not cause the shattering; what caused the shattering was the baseball colliding with the window.

Relevantly similar cases of necessitating without causing can be found in the literature on trumping preemption (e.g., Schaffer 2000). In cases of trumping preemption, each of two candidate causes would have brought about the effect in the absence of the other but, when both are present, one trumps the other (i.e., preempts it but without "cutting" the causal chain). For instance, when the sergeant and major both order the troops to advance, the troops advance because the major ordered them to advance. Had the sergeant ordered them to advance in the major's absence, they would have advanced,

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[120] Cf. Lowe (2004, 710), where he attributes a similar example to Paul Teller.
[121] Here I am assuming, with my opponents, that universalism is incorrect.
[122] It may likewise by possible for baseballs to cause the scatterings of atoms arranged windowwise. For instance, if it is possible that there be a baseball with no atomic parts (perhaps an "extended simple"), it may be used to shatter a window, in which case there will be nothing other than the baseball to have caused the scatterings.

and it would have been because the sergeant ordered them to advance.[123] But, as it happens, the lower-ranking officer's commands are trumped and preempted by those of the higher-ranking officer: the troops are following the major's orders, and would have advanced no matter what the sergeant had ordered them to do. Likewise, had the atoms arranged baseballwise collided with the window in the absence of the baseball, they would have been the cause of the window's shattering. But the activities of baseball trump and preempt the activities of the atoms arranged baseballwise.

The specialization response to Merricks's argument also mirrors a promising response to the causal exclusion argument in the philosophy of mind. Stephen Yablo contends that, when several events are each causally sufficient for a given effect, *the* cause is the one that is most commensurate, or proportional, to the effect.[124] Sophie the pigeon is trained to peck at red patches, and has just pecked a scarlet patch. Her seeing a colored patch was required but not enough for the pecking to occur. Her seeing a scarlet patch was enough but not required for the pecking to occur. Her seeing a red patch was required and just enough for the pecking. Among the candidate causes, seeing a red patch is the most commensurate to the effect—including no extraneous causal material and omitting no important causal material—and therefore has what it takes to be *the* cause.

One might think that the baseball (rather than the atoms arranged baseballwise) is the cause of the shattering of the window because, like the major, it trumps and preempts other candidate causes or because, like seeing a red patch, it is more commensurate to the effect than other candidate causes. Either way, there is independent support for the claim that the activities of the atoms arranged baseballwise do not cause the window to

[123] See David Lewis (2000, 183), who attributes the example to Bas van Fraassen.
[124] Yablo (1992, 273-80).

shatter—despite causally guaranteeing the shattering of the window—and, hence, to reject premise (6).

(Some might complain that the foregoing observations about trumping preemption and commensurability are, in fact, only observations about causal *explanation*, not about causation. But this is far from clear. We not only have the intuition that the baseball colliding with the window explains the window's shattering, but also that the baseball colliding with the window is the cause of the window's shattering. In any event, Schaffer and Yablo themselves take their observations to concern causation—not just explanation—as does David Lewis, who takes his counterfactual theory of causation to have been soundly refuted by Schaffer's examples of trumping preemption.[125] I will not argue that they are correct. Let us simply note that if these examples show what Yablo, Schaffer, and Lewis take them to show, then the specialization response to the exclusion argument against baseballs is not without independent support.)

The same can be said for the quantity of rubber and yarn with which the baseball coincides, which, according to some, is distinct from the baseball itself. That quantity can exist in the absence of the baseball, for instance, if the yarn is unraveled and the rubber is melted down. That quantity might then be placed in a sink in such a way as to clog the drain. The rubber and yarn's clogging the drain causes the sink to back up. So the quantity has causal powers. And, for the kinds of reasons given above, the atomic parts of

[125] Lewis (2000).

the quantity do not cause the sink to back up. So the quantity has nonredundant causal powers.[126]

4. Against Specialization: Emergence

Merricks anticipates the response that ordinary material objects cause things to happen at the macroscopic level that are not caused by the activities of their parts, and raises two objections. His first objection is that any such answers "implies the false claim that baseballs have 'emergent' properties" (2001, 62). His argument appears to run as follows:

> (6a) If it is possible that there be an event e such that a baseball causes e but the atoms that compose the baseball do not cause e, then baseballs can have emergent, causally efficacious properties that its parts lack.
>
> (6b) Necessarily, no baseballs have emergent properties, causally efficacious properties that their parts lack.
>
> (6) So, necessarily, for every baseball and event e, if the atoms that compose the baseball do not cause e, then the baseball does not cause e.

There are multiple ways of resisting this argument. The first is to deny that baseballs have to have distinctive causally efficacious properties in order to cause things that their parts

[126] Likewise, those who countenance the clump of rubber and yarn, as a still further object may hold that it too has causal powers. All this requires is that there be some world in which the clump exists in the absence of the baseball (e.g., by being flattened into a disc) and in which it shatters a window. It may then be argued that the clump would be the nonredundant cause of the shattering on the grounds that the clump trumps both the quantity and the atoms with which it coincides as the cause of the shattering or, alternatively, that the clump is more commensurate to the shattering than the quantity or the atoms.

do not. The second is to concede that they must have distinctive causally efficacious properties, but deny that these properties need be emergent. The third is to concede that these properties are emergent, but insist that baseballs and the like do have emergent properties.

Let us begin with the first option. In standard cases of trumping preemption, the candidate causes do not differ with regard to their causally efficacious properties. Both the sergeant and the major have shouted 'Advance', are loud enough to be heard, and so forth. The one is higher ranking than the other, but this is not a causally efficacious property; at best, it is causally relevant to their following his orders. Likewise, it may be that the atoms arranged baseballwise (collectively) instantiate all of the same causally efficacious properties as the baseball—having such and such a mass and velocity, and so forth—and yet the baseball, and not its parts, causes the windows to shatter because it is "higher ranking" and, accordingly, its activities trump and preempt the activities of its parts. Its "higher rank" may then be taken to consist in its being more commensurate to the shattering than the activities of the atoms (cf. Yablo's pigeon). Premise (6a) would then be false: the baseball can cause things that its parts do not irrespective of whether its parts share all of its causally efficacious properties.

The second option was to accept that there is some causally efficacious property that the baseball has but that its parts lack. E. J. Lowe argues—and Merricks agrees—that, while the baseball has a certain velocity and momentum, the atoms arranged baseballwise cannot be said to have that velocity and momentum.[127] If this is correct, then having the momentum that it does can serve as the distinctive causally efficacious

[127] See Lowe (2004, 708-9) and Merricks (2003b, 728). For continuity, I take the liberty of restating Lowe's and Merricks's points in terms of baseballs (vs. statues).

property in virtue of which the baseball but not its parts causes the window to shatter. It is then open to one to either deny (6a) and insist that momentum is not an emergent property, or to concede that it is an emergent property and deny (6b).

The choice is difficult because there are embarrassingly many different notions of emergence, and Merricks does not specify which he has in mind. Emergence is most commonly understood to be epistemological in nature: for instance, a property of a complex object is said to be emergent just in case there is no a priori entailment from the features and laws governing the parts of the object to its instantiation of that property. But facts about the momentum of composite objects are a priori deducible from, facts about the activities of their parts; so momentum plainly is not emergent in this sense.[128] Nor is it emergent in the sense of not being wholly determined by, and wholly explicable in terms of, the features of the object that has that momentum.[129]

But since Merricks agrees with Lowe that the parts of the baseball neither individually nor collectively have the momentum that the baseball purports to have, it does not much matter what notion of emergence he may have had in mind. If momentum does turn out to be emergent in the intended sense, then emergence is not objectionable and one may painlessly deny (6b). If his envisaged definition of emergence does not apply to momentum, then one can deny that baseballs need to have any emergent

[128] Alternatively, one might think of an emergent property simply as one that an object has but that its parts collectively lack; but, although momentum does come out as an emergent property on this characterization, there is no good reason to deny that baseballs and the like have emergent properties in this very weak sense.

[129] As Lowe points out, to insist that the relevant causally efficacious properties of the baseball not be explicable in terms of features of its parts is to require "much more than the plausible demand that [baseballs] 'earn their keep' by doing some genuine causal work" (2004, 710).

property in order to cause things that their parts do not (i.e., one may deny (6a))—for this can be explained in terms of their momentum, which is not emergent.

Merricks's reply to Lowe is that Lowe takes the point that baseballs have distinctive causal powers to imply that baseballs have nonredundant causal powers.[130] Of course Merricks is right that the one does not imply the other. But, to the extent that momentum is both an unobjectionable property and a causally efficacious property that is not shared by the parts of the baseball, it is open to the proponent of specialization to deny either (6a) or (6b)—depending upon what is supposed to be meant by 'emergence'. This does not constitute an argument for specialization, but it does constitute an effective reply to the argument from emergence against specialization.

5. Against Specialization: Causal Transmission

Merricks's second objection to the view that ordinary inanimate material objects cause things that are not caused by their parts is that it is ruled out by the following principle:

> *The Principle of Causal Transmission:* If some objects cause events $v_1 \ldots v_n$, and $v_1 \ldots v_n$ compose event V, then those objects cause V.[131]

If this principle is correct then, since the atoms arranged baseballwise cause the scatterings of the atoms that compose the window, it follows that those atoms arranged

[130] Merricks (2003b, 728-9). In Lowe's defense, he never actually claims that the one entails the other. Rather, Lowe claims only that the mere fact that the baseball's causal powers are wholly explicable in terms of the powers of its parts does not give us reason to think these powers are redundant. In Merricks's defense, Lowe fails to directly engage either of his arguments against the specialization response (i.e., the arguments from emergence and causal transmission).

[131] Merricks (2001, 64-5).

baseballwise cause the shattering of the window. So the envisaged response cannot be correct.

Merricks provides no argument in defense of this principle. But some such argument is sorely needed, for appeal to this premise seems just to beg the question against the proponent of specialization. The response was that there is a division of causal labor: generally, macroscopic items are causally responsible for macroscopic events, and the associated microscopic items are causally responsible for the associated microscopic events. Denying the principle of causal transmission is not an unforeseen cost of the response; it *is* the response! So in appealing to this principle Merricks does not supply any further reason for resisting specialization.

Of course, the transmission principle is intuitively plausible, so perhaps that is reason enough to accept it. But intuitively plausible general principles are a dime a dozen. Here is another:

> *The Principle of Macroscopic Efficacy*: If the objects that compose O are the cause of events $v_1 \ldots v_n$, and $v_1 \ldots v_n$ compose event V, then O causes V.

Here is another:

> *The Principle of Causal Specialization*: If the objects that compose O are the cause of events $v_1 \ldots v_n$, and $v_1 \ldots v_n$ compose event V, then O is *the* cause of V.[132]

These are intuitively plausible as well. But we know that the transmission principle and the specialization principle cannot both be correct. What we have here is an intuitional

[132] Those who think that some things can compose more than one object at a time (e.g., both a statue and a lump of clay) will prefer the closely related principle: if objects $o_1 \ldots o_n$ cause events $v_1 \ldots v_n$, and both $o_1 \ldots o_n$ and $v_1 \ldots v_n$ have a fusion, then each fusion of $v_1 \ldots v_n$ is caused by a fusion of $o_1 \ldots o_n$.

conflict. There is no obvious reason to favor the transmission principle over the specialization principle. So, if the appeal to transmission is to pull any dialectical weight, Merricks must somehow explain away the intuitions that support the specialization principle, or else provide some other reason for thinking that the intuitional conflict is best resolved in favor of the intuitions supporting the transmission principle.[133]

The plausibility of the transmission principle may be due in part to the fact that there is a wide range of events to which it does apply, what we may call low-grade events. Low-grade events are events like the scattering of the of atoms arranged windowwise which are ontologically on a par with such low-grade objects as collections, groups, sums, and assortments. This low-grade event is composed of the very same events as the shattering of the window: this atom's zooming to the left at such and such a speed, that atom's whizzing off to the right, and so forth. But the shattering and the scattering differ with respect to their individuation conditions. The low-grade event of the scattering of those atoms cannot have occurred in the absence of a_1. The high-grade event of the shattering of the window, by contrast, could have occurred even had a_1 never existed. A low-grade event has parts but, like a collection or an assortment, is nothing over and above its parts. So it is perfectly in keeping with specialization that low-grade events—which are nothing over and above the parts that compose them—are caused by the very things that cause the parts of these events. But Merricks gives us no good reason to think that the transmission principle holds across the board, nor does he give us any reason to favor the transmission principle over the specialization principle.

[133] One can of course construct an argument against the specialization principle by invoking something like premise (6). But this is exactly the premise that is currently under dispute.

6. Microphysical Completeness

What may be underlying both of Merricks's arguments is a deeper concern about violating a certain principle of microphysical completeness, according to which everything that happens can, on some level, be accounted for in microphysical terms. As stated, microphysical completeness has a certain intuitive appeal, but it also has a number of readings. The proponent of specialization will have to deny the strongest reading of this principle—on which it says that the cause of every event is some microphysical object or objects—but so will Merricks, since he thinks that some things that happen are nonredundantly caused by humans. So let us see if there is some other principle in the vicinity that the proponent of specialization alone is committed to denying.

In connection with his argument from emergence, Merricks says that even those who accept that *some* objects have emergent properties ought to agree that "everything a baseball causes is caused by its parts at some level of decomposition" (2001, 62), suggesting that the proponent of specialization must deny this. But the proponent of specialization can agree with Merricks here. What happens when a baseball causes a window to shatter, at one level of decomposition, is that some atoms arranged baseballwise cause some atoms arranged windowwise to scatter. So what the baseball causes is caused by its parts at some level of decomposition. Perhaps what Merricks has something else in mind, namely, that everything that baseballs and the like cause is caused by their parts at some level of decomposition *of the explanandum but not the explanans*—that there is nothing caused by the baseball that is not also caused by atoms

arranged baseballwise. Of course the proponent of specialization must reject this claim; but this is just premise (6). So to raise this as an objection to the proponent of specialization is just to reiterate the contested premise, not to raise a new objection.

There seems to be another way of understanding microphysical completeness which is open to the proponent of specialization to accept, and which seems to best reflect the sentiment behind the principle. There is evidently a highly coarse-grained category of entities for which microphysical completeness does hold. This is the level of reality at which empirically equivalent scientific theories which postulate different sorts of entities can truly be said to describe one and the same thing. We can think of such coarse-grained entities as "conditions of the world."[134] The condition of a window shattering and the condition of its atoms scattering, unlike the associated events, are one and the same. Likewise, the condition of a baseball colliding with a window is identical with the condition of some atoms arranged baseballwise colliding with a window. Every condition of the world can be explained by some condition of some microphysical items. So microphysical completeness is vindicated, at the level of conditions of the world.

7. Conclusion

I have shown that Merricks's overdetermination argument against baseballs and the like may be blocked without holding that events brought about by baseballs and the like are systematically overdetermined, that baseballs and the like are epiphenomenal, or that baseballs and the like have causally efficacious properties that are emergent in any objectionable sense. Rather, I have shown that the argument may be resisted simply by

[134] See Bealer (1982) on conditions. Facts are often spoken of this way, but facts, like propositions and events, are arguably too fine-grained to play this kind of role.

holding that there is division of labor between macroscopic and microscopic objects: macroscopic objects are typically causally responsible for the events involving other macroscopic objects, and microscopic objects are typically causally responsible for events involving other microscopic objects. I have not tried to argue *that there is* a division of labor—and so do not expect to have persuaded those who have prefer overdetermination or who prefer to do without baseballs for independent reasons—but I do take myself to have shown that the exclusion argument can be resisted, at no great cost.

V

Eliminativism and the Challenge from Folk Belief*

> I regret to say that all too many professors of philosophy consider it their duty to be sycophants of common sense, and thus, doubtless unintentionally, to bow down in homage before savage superstitions of cannibals.
>
> Bertrand Russell[135]

> I've met the man on the street, and he's a c*nt.
>
> Sid Vicious[136]

1. The Challenge from Folk Belief

Not all philosophers share the traditional philosophical goal of preserving our pretheoretical conception of the world in the face of puzzles and arguments that threaten to undermine this conception. But virtually everyone agrees that, even after presenting the arguments for their positions, proponents of revisionary philosophical theories (those that deviate from our pretheoretical conception of the world) are required to provide some sort of account of the conflict between their theories and what the folk believe. Those who defend seemingly revisionary theories may confront the challenge in one of two ways. Some supply a compatibilist account according to which there in fact is no conflict with folk belief. Others supply an incompatibilist account, attempting to answer the challenge without denying that the conflict is genuine.

* Thanks to Eli Hirsch, Rob Koons, Aidan McGlynn, Trenton Merricks, Bryan Pickel, Mark Sainsbury, and Briggs Wright.

[135] Russell (1925, 143).

[136] Press interview, c. 1977.

How are we to assess whether this or that answer the challenge is satisfactory? Is it enough to identify some truth in the vicinity of the allegedly false belief about which the folk are not mistaken? Is in enough to show that the costs of flouting folk belief are counterbalanced by certain theoretical benefits of the revisionary position? The truth is that there are more and less serious versions of the challenge from folk belief, and existing attempts to answer the challenge are equipped to handle some of them, but are often unequipped to handle the most serious versions—or so I shall argue. I will present what I take to be the two most serious versions of the challenge from folk belief and critically examine various general strategies that may be employed in answering the challenge. The examination will proceed as a case study, the focus of which is the compositional eliminativist thesis that there are no statues or chairs: although there are "statuewise" and "chairwise" arrangements of atoms, these atoms do not together compose anything.[137] This example will serve to anchor our examination of various general strategies for answering the challenge from folk belief. For ease of exposition, I shall suppose throughout that eliminativism is correct.

2. Reasonableness and Resilience

Revisionary philosophical claims often have implausible implications at the level of concepts. Claims of the form 'Fa' are true just in case the referent of 'a' falls under the

[137] Peter van Inwagen (1990), Terence Horgan and Matjaž Potrč (2000), Trenton Merricks (2001), and Dorr (2005) all embrace some such form of compositional eliminativism. See Merricks (2001, 4) for explication of the notion of being arranged statuewise. Many of the points raised below will also apply equally to those eliminativists who allow that things arranged statuewise compose something, but deny that what they compose are statues (e.g., Heller 1990). See Hawthorne and Michael (1996) for a related case study, which focuses exclusively on van Inwagen's compatibilist strategy.

concept expressed by 'F' (where the 'a'-position may be occupied by singular or plural referring expressions). Eliminativists deny that atoms arranged statuewise ever compose something. It follows that the concept *compose something* does not apply to atoms arranged statuewise. Why, then, do the folk believe that there are statues? By hypothesis, they have never seen a statue (for there are none). They do sometimes see atoms arranged statuewise, but their concept *compose something*—the very concept that they employ in entertaining the question of whether those atoms compose something, in coming to believe that they do compose something, and in reporting this belief—does not apply to these atoms. It would seem, then, that the folk believe that there are statues, and believe of (these or those) atoms arranged statuewise that they compose something, for no reason whatsoever.[138] So the fact that the relevant falsities should be so confidently believed by otherwise reasonable and intelligent folk cries out for explanation. Call this the *problem of reasonableness*.

Eliminativists must also explain why these beliefs are so resilient. Why is the falsity of the belief that there are statues not exposed by narrow a priori reflection, that is, a priori reflection that is narrowly focused just on the proposition believed and that does not involve auxiliary reflection on puzzles, arguments, general principles, and the like? Narrow a priori reflection on the proposition that (Gettier's) Smith knows that the man who gets the job has ten coins in his pocket suffices to show us that he does not. Similarly for the proposition that it is possible that Putnam's super-spartan and Lewis's martian are in pain, that the stuff on twin earth is water, and that Aristotle need not have been the teacher of Alexander. Our ordinary judgments about these propositions are the

[138] This may all be restated in the idiom of 'being the parts of a single thing', for those concerned that the folk do not possess the concept *compose*.

means by which we assess general principles that imply their truth or falsity, not the other way round. The proposition that these or those atoms arranged statuewise compose something seems relevantly similar to these other concrete-case propositions. So why, in this of all cases, should reflection on arguments and general principles be the only available route for coming to see that it is false?[139] Call this the problem of resilience under narrow a priori reflection or, for short, the *problem of resilience*.

A satisfactory answer to the challenge from folk belief must solve both the problem of reasonableness and the problem of resilience. In light of this, many attempts to answer the challenge can be seen to be unsatisfactory. For instance, the challenge from folk belief is sometimes treated as a mere dialectical requirement: philosophers will typically cling stubbornly to common sense, even when they cannot locate the flaw in one's argument, so if there is to be any hope at all of persuading them, one must convince them that the threat to common sense is less drastic than it first appears. If this were all that there is to the challenge from folk belief, then the failure to produce a satisfactory account of the conflict could plausibly be treated simply as a cost of the theory, to be weighed against its various theoretical virtues. While this is appropriate in the case of some theoretical shortcomings—lack of parsimony, lack of unity, lack of neutrality, treating this or that as explanatorily basic—explanatory inadequacy (like the failure to accommodate clear data) cannot simply be treated as a cost of a theory to be weighed against its various virtues. If no solution can be given, then certain phenomena that stand in need of explanation go unexplained (and the fact that the false folk beliefs are reasonable and resilient certainly is not explanatorily basic).

[139] Merricks (2001, 74-6).

The challenge is other times taken simply to be a requirement that one show that the departure from folk belief is not *as* radical as it first seems, or that they are somehow different from purely delusional beliefs, for instance, the belief that one has an invisible companion or that one's head is a pumpkin. This challenge can be answered relatively easily. Although there are no statues, there are atoms arranged statuewise; so the folk are not making a fundamental mistake about the structure of the world or about the configuration of matter and atoms in spacetime. So there is some sense in which the beliefs, although false, are not "inappropriate." But, as we shall see in §4, simply identifying some way or other in which the false folk beliefs are different from purely delusional beliefs cannot, by itself, serve as a solution to the more serious problems of reasonableness and resilience.

The failure to solve the problems of reasonableness and resilience is a serious problem for any revisionary theory, insofar as something that cries of for explanation is left unexplained. In what follows, I consider a number of general strategies that eliminativists might employ as a means of reconciling eliminativism with folk belief and show how they fall short of solving the problems of reasonableness and resilience. This examination will not exhaust the options available to the eliminativist, but it will serve to illuminate the general constraints on an adequate response to the challenge from folk belief.

3. Compatibilist Solutions

Let us begin with the most straightforward response to the challenge from folk belief: namely, to deny that the theory in question is genuinely at odds with folk belief.

Compatibilists maintain that the appearance of conflict is the result of misinterpreting everyday discourse about material objects, and supply a paraphrase of the relevant sentences of everyday discourse. These paraphrases may be understood in more than one way: either as specifying one of two (or more) literal meanings of the sentence in question, or as specifying what the folk conversationally intend in uttering the sentence. On the first sort of strategy, the folk are taken to be speaking truly; on the second, the idea is that what they say is false, but that this is beside the point since all they mean to convey, and all they really believe, is the paraphrase.[140] Either way, the claim is that it is only the truth expressed by the paraphrase that the folk believe, not the falsity expressed on straightforward readings of the relevant sentences, in which case the problems of reasonableness and resilience do not even arise.

Peter van Inwagen is a compatibilist. He maintains that there are no chairs, and he offers a paraphrase of such sentences of everyday discourse as 'there are chairs nearby' according to which they mean only (roughly) that there are mereological simples arranged chairwise nearby.[141] Van Inwagen holds that everyday discourse about material objects is of a kind with the "loose and misleading" use of 'The sun moved behind the elms', but he is not explicit about whether he takes such sentences to literally express the relevant paraphrases, or rather to literally express false propositions while merely conveying the true paraphrase. But, either way, the contention is that such English sentences as 'there is a chair nearby' have two established uses; if not, then van Inwagen

[140] Paraphrases are also sometimes put forward in a revisionary spirit, as specifying not what we do say or mean, but rather what we *should* mean by the relevant sentences. But, unless this is combined with the further claim that the folk believe only this thing we should mean, and not what we in fact say or mean, this kind of paraphrase strategy is of no use to the compatibilist in the present context.
[141] van Inwagen (1990, 108-14).

could not coherently say (in English) that the folk do not mean that there are chairs nearby when they say 'there are chairs nearby'.[142]

Van Inwagen's compatibilist strategy has been widely criticized,[143] but it is worth reviewing its main shortcoming—namely, that it is a linguistic hypothesis for which there is no evidence. In typical cases of loose or misleading talk, there is no shortage of reasons for understanding speakers to be speaking loosely. For instance, when Joe says 'the sun moved behind the elms', the first piece of evidence that he is speaking loosely is that, in addition to the straightforward reading on which the sentence is false, we can actually hear a second natural reading on which he is conveying a true proposition that does not entail the relevant falsity. Second, if asked to explain what he really means, Joe will produce something like the relevant paraphrase (e.g., that the sun is now obstructed from view by the elms). A third piece of evidence is that, if we take his utterance too literally, then we must understand him to be saying something that he believes to be false. A fourth, important piece of evidence is that, when he finds that his remarks have been at face value ("You *really* think the sun *moved*? It's the earth that moved!"), Joe responds not as one who takes himself to stand corrected but as one who takes himself to have been misunderstood.

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[142] Of course, van Inwagen might insist that *his* sentence 'there are no chairs' is not really a sentence of English, but is rather a sentence of the "language of refuge" (1990, 131) or the language of the "ontology room" (Hawthorne and Cortens 1995, 154-7; Dorr 2005) or the "fundamental language" (Sider, forthcoming), in which familiar words are not being used with their ordinary meanings. Those who opt for this form of eliminativism may or may not face a challenge from folk belief, depending upon what 'there are no chairs' means in this pretend language.

[143] E.g., Tye (1992), Hirsch (1993b; 2002a, 108-112), Hawthorne and Michael (1996), Sider (2001, 178-80), Merricks (2001, pp. 162-170), and Varzi (2002, 64-5).

By contrast, there appears to be no evidence for the hypothesis that the folk speak loosely when they appear to be quantifying over chairs and the like. The sentence 'There is a chair nearby' does not seem to have a second established reading that does not entail that there (really, literally, strictly) is a chair nearby. Nor do the folk ever make explicit what they allegedly really mean to be saying—that there are atoms arranged chairwise nearby. Nor would the folk be saying something that they take to be false on a straightforward understanding of their utterance. (No compatibilist, to my knowledge, holds that the folk believe that there are no chairs; compatibilists make only the weaker claim that they have no beliefs one way or the other.) Nor do the folk give any indication that they take themselves to be misunderstood when they find that their utterances have been taken at face value.[144] In the absence of any such evidence, the multiplication of established usages in the present case has no independent motivation and no explanatory value.[145] Consequently, since there apparently is no reason not to take what the folk are saying at face value, we ought to take what they are saying at face value.[146]

One might suggest that, even though there is no linguistic or behavioral evidence for the paraphrase, there is nevertheless philosophical evidence—specifically, the truth of eliminativism can be cited as evidence in favor of van Inwagen's hypothesis. To take their utterances at face value is to take the folk to be saying a great many false things; so

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[144] See Merricks (2001, 162-170) for further, amusing discussion of the retraction test for van Inwagen's compatibilist strategy.

[145] Of course, this sort of evidence sometimes *is* available for reconciling certain things that the folk say with what philosophers say. For instance, although they may insist that such sentences as 'It is possible to jump over a building' and 'Events are things' are false, the folk can be made to hear the second, true readings of these sentences (e.g., by saying "Surely there is such a thing as an event!").

[146] As Tyler Burge observes: "[U]nless there are clear reasons for construing discourse as ambiguous, elliptical or involving special idioms, we should not so construe it. Literal interpretation is *ceteris paribus* preferred" (1979, 88).

charity demands that the folk be interpreted as speaking loosely. But this appeal to charity is misguided. Charity requires, not that we take the folk to be speaking truly, but that we take them to be speaking rationally.[147] Is it irrational for them to say that there is a chair nearby, despite the fact that there are no chairs? Not at all. The only known reasons for thinking that there are no chairs are highly theoretical, so the philosophically uninformed folk can hardly be charged with irrationality for not having realized that they do not exist.

One sometimes hears it said that everyday discourse poses no serious problem for eliminativism (or other apparently revisionary theories, mutatis mutandis), since eliminativists can just say that the folk are speaking loosely. The primary moral of the foregoing is that this is not something that the eliminativist can "just say," for there seems to be no serious reason to think that the folk are speaking loosely. Accordingly, there evidently is no reason to doubt that the folk believe in chairs and the like. Van Inwagen disagrees:

> "It is far from obvious … that it is a matter of Universal Belief that there are chairs. In fact, to say that any particular proposition that would be of interest to philosophers belongs to the body of Universal Belief is to put forward a philosophical thesis, not a trivial one." (1990, 103).

Presumably, the question of whether there are chairs is of interest to philosophers, not because of its intrinsic richness and subtlety, but rather because there are interesting philosophical arguments that have as their conclusion that there are no chairs. But if the mere availability of such arguments truly calls into question whether the folk believe the

[147] Cf. Grandy (1971, 440f), Lewis (1974, 336-7), Wiggins (1980, 198-200), Hirsch (2002a, 105), and Varzi (2002, 61-5).

relevant proposition, one has to wonder whether the folk have any beliefs whatsoever. One can easily conjure up an interesting philosophical argument to the effect that no one has a father.[148] Given the seriousness with which philosophers have taken arguments that there are no chairs, perhaps this argument would be taken seriously as well. But surely this gives us no reason to think that the folk have no beliefs one way or the other about whether anyone has a father. And, in any event, the postulation of simples and even subatomic particles is no less controversial in philosophical circles than is the postulation of chairs, so this line of reasoning seems to undercut van Inwagen's paraphrase strategy, according to which the folk are expressing beliefs about the arrangement of such things.

4. Nearly True and Quasi-True Beliefs

The project of re-interpreting everyday discourse as a means of reconciling eliminativism with folk belief seems hopeless. But some may feel that this project is entirely unnecessary. There is no need to find some reinterpretation of pre-Copernican discourse about the movement of the sun according to which the folk said and believed something true, since more plausibly they were simply in error. Likewise, there seems to be no need to reinterpret our claims about absolute simultaneity in such a way that they are consistent with relativity theory. By parity, perhaps eliminativists ought to prefer an incompatibilist strategy, according to which the folk really do believe that there are statues and chairs. The key will be to explain why these beliefs are both reasonable and resilient. At the close of §2, I suggested that the problems of reasonableness and

[148] Suppose for reductio that it is possible to have a father. First premise: time travel is possible. Second premise: if so, then it is possible to be one's own father. Third premise: fatherhood is irreflexive. By reductio: it is not possible to have a father. A fortiori: no one has a father.

resilience cannot be solved simply by identifying some truth in the vicinity of the falsehood that the folk believe, for instance, concerning the distribution of atoms or matter. In this section, I show why that is by assessing three existing incompatibilist strategies for answering the challenge from folk belief.

Trenton Merricks offers the following explanation of why it is reasonable for the folk to believe that there are statues: "*atoms arranged statuewise* often play a key role in producing, and grounding the justification of, the belief that statues exist. In general, a false belief's being nearly as good as true explains how *reasonable* people come to hold it."[149] Before we can properly assess whether the explanation of the reasonableness of this belief in terms of its being "nearly good as true" is satisfactory, we must know what it is for a belief to be nearly as good as true. Merricks is quite explicit about what he has in mind, stipulatively introducing the notion as follows: for a false belief that there are Fs to be nearly as good as true just is, by definition, for there to be atoms arranged F-wise.[150] So, to say that the belief in statues is reasonable because it is nearly as good as true is really just to say that the belief is reasonable because there are atoms arranged statuewise.

This may at first seem like a perfectly good explanation. But bear in mind that we normally take there to be both a tight perceptual connection and a tight conceptual connection between statues and atoms arranged statuewise. The eliminativist, however, denies that we see statues when we see atoms arranged statuewise and denies that it is a conceptual truth that atoms arranged statuewise compose something. Since our concept *compose something* does not apply to atoms arranged statuewise, at most what one should find upon reflecting on one's concepts is that *if* there could be statues, *then* the existence

[149] Merricks (2001, 172). The italics are his.
[150] Merricks (2001, 171).

of atoms arranged statuewise would suffice for the existence of a statue. Given only this conditional conceptual truth, it would be positively *ir*rational to conclude on the basis of atoms' being arranged statuewise that they compose something—unless, of course, one has independent justification for accepting or presupposing the antecedent (i.e., that there are, or could have been, statues). But this leaves us right back where we started, that is, in need of an explanation of why otherwise reasonable people erroneously take there to be statues.

So Merricks's answer to the challenge from folk belief cannot serve as a solution to the problem of reasonableness. Moreover, he does not even address the problem of resilience. He admits that nothing short of philosophical argumentation can undermine our reasons for believing of atoms arranged statuewise that they compose something,[151] but he makes no attempt to explain why in this of all cases narrow a priori reflection does not suffice. (Some may feel that it is somehow illegitimate to demand an answer to the problem of resilience; I address this concern in §8.)

Other incompatibilist attempts fall short of solving the problem of reasonableness for similar reasons. Ted Sider encourages presentists to deny the truth of such problematic beliefs as the belief that Lewis admires Ramsey and then answer the challenge from folk belief by maintaining that such folk beliefs are nevertheless "quasi-true," where to say that the beliefs are quasi-true is to say that there are certain true propositions that *would* have entailed the truth of these beliefs had *eternalism* been true.[152] Eliminativists may likewise try to answer the challenge from folk belief by pointing to the quasi-truth of the belief that there are statues; there is, after all, a true

[151] Merricks (2001, 74-6).
[152] Sider (1999b, 340).

proposition (i.e., that there are atoms arranged statuewise) that would have entailed the truth of the belief that there are statues had folk ontology been correct about the conditions under which composition occurs. But the fact that, were folk ontology correct, atoms arranged statuewise would compose something goes no way towards explaining why it is reasonable to believe that they do indeed compose something until we have some explanation of why the folk find it reasonable to accept folk ontology.[153] So the appeal to the quasi-truth of the false folk beliefs cannot, by itself, solve the problem of reasonableness.

There is a related answer to the challenge of folk belief which, structurally, is far better suited to solve the problem of reasonableness. Ned Markosian maintains that the folk *confuse* the relevant quasi-truths with the associated true propositions that would entail them were eternalism true, and are misreporting what they really believe.[154] What makes this different from Merricks's and Sider's strategies is that here we have a genuine psychological explanation for the folk's mistake. One might try to extend this strategy to the present case, maintaining that the folk confuse the proposition that atoms are arranged statuewise with the proposition that there are statues. The problem with this strategy is that (like the compatibilist strategy discussed above) it lacks plausibility. If asked whether what they believe is that there are statues or only that there are atoms arranged statuewise—assuming that one can get them to understand the question—one would never expect the folk to respond "that's right, the second one, that's all I meant to say."

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[153] For similar reasons, the appeal to quasi-truth cannot, by itself, solve the problem of reasonableness facing the presentist who denies that Lewis admires Ramsey. Sider himself goes on to fortify this sort of answer to the challenge from folk belief with a separate explanation of the reasonableness of this belief. I consider this explanation in §7.
[154] Markosian (2003).

The folk do not exhibit any of the normal signs of being confused or failing to mark a distinction. So there is little if any reason to accept the psychological hypothesis that the folk are confusing these two propositions.[155]

5. Appearances

The reason that the appeal to near truth and quasi-truth cannot (by itself) answer the challenge from folk belief is that it fails to identify any reasons that the folk have for believing in statues and the like. A satisfactory answer to the challenge will evidently have to identify a source of evidence for the belief in statues. There are three obvious candidates: appearances, intuition, and testimony. I will consider each in turn.

The reasonableness of belief in statues and chairs *would* be adequately explained by our seeing statues and chairs. By hypothesis, however, we have never seen any statues or chairs. Eliminativists may nevertheless suggest that the fact that we see atoms arranged statuewise plays some role in explaining the reasonableness of belief in statues. Arguably, the world looks exactly the way it would look if (per impossible) atoms arranged statuewise were to compose statues. So perhaps the reasonableness of the relevant folk beliefs is grounded in the fact that it looks as though there are statues and that, were there a statue there, its presence would explain the experience that one is having.

But this seems not to be an adequate explanation of the belief in statues. Let us suppose (with the eliminativist) that there is nothing composed of my nose and the Eiffel Tower. Nevertheless, appearances would have been exactly the same had it been the case

[155] The implausibility becomes even more pronounced as we consider more and more complex cases; cf. Sider (1999b, 330-1).

that (contra hypothesis) there were something that had my nose and the Eiffel Tower, in their present arrangement, as its parts.[156] But does this show that it would be reasonable for one to believe—not on the basis of any philosophical reflection but just on the basis of looking at my nose and the Eiffel Tower—that there is something composed of my nose and the Eiffel Tower? Obviously not.[157] Likewise, things arguably appear exactly the way they would appear were my experiences the work of an evil demon. But it obviously is not therefore reasonable to believe, on this basis, that they are the work of an evil demon.[158]

For just the same reasons, the mere fact that things appear the way they would had there actually been statues does not suffice to make it reasonable to believe that there are statues or to believe of atoms arranged statuewise that they compose something.[159] So this approach fails to solve the problem of reasonableness. One might try to fortify the response by saying, not just that things look the way they would were there statues and other composites, but that perception positively presents the world as containing statues and other composites.[160] It *looks* as though there are statues, and for this reason it is reasonable to believe in statues. But one must be careful here to distinguish between two

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[156] Merricks: "one's visual evidence would be the same *whether or not* those [atoms] composed something." (2001, 9)

[157] One might agree that this would not be reasonable, but only because we have no kind concept that purports to apply to nose-tower fusions. But, as I will contend in the following section, the acquisition of such concepts seems not to affect our judgments about which arrangements suffice for composition to occur.

[158] Perhaps this is because these skeptical hypotheses are relatively *bad* explanations of our experience. Granted. But this response cannot save the eliminativist, for we would then need some reason to think that the existence of statues is a *good* explanation, despite their nonexistence; and that brings us right back where we started, namely, in need of an explanation of the reasonableness of the folk belief in statues.

[159] Merricks raises similar points about the inadequacy of appealing to experience in defense of statue-beliefs (2001, 8-9 and 73-76).

[160] Thanks to Rob Koons for pressing me on this point.

senses of 'looks'.[161] On the one hand, there is the phenomenal sense of 'looks' in which the way things look is individuated by what it is like for the subject of the relevant experience. But it is (at best) misleading to say that the world looks to contain statues in this phenomenal sense of 'looks' for things look the same even to a subject lacking such concepts as *statue* and even *composition*.[162] It is, rather, in the epistemic sense of 'looks' that the world looks to contain composites. The way that things look in this latter sense is heavily influenced by our concepts and beliefs. Yet what needs to be explained by the eliminativist is why we have the beliefs that we do, so the appeal to how things look in this epistemic sense threatens to generate an explanatory circularity.

Finally, the appeal to appearances goes no way towards solving the problem of resilience: even assuming that these statue-ish appearances can somehow account for the reasonableness of our belief in statues, since our concept *compose something* does not apply to atoms arranged statuewise, it is somewhat mysterious why narrow a priori reflection cannot (and does not) by itself expose the error.

6. Intuitional Error

The fact that things appear exactly as they would if there were statues cannot explain why it is reasonable to believe in statues. How else might the eliminativist try to

[161] See Jackson 1977.

[162] One might try to appeal to the familiar "Gestalt phenomena" in perception, in which certain things are presented in experience as belonging together, and contend that it is this feature of experience that makes it reasonable to believe that certain things compose something. But, in paradigm instances of Gestalt phenomena, e.g., when a rows of dots (vs. columns of dots) are presented as belonging together, we do not judge that the relevant items compose something but only that they belong together. So the fact that the things arranged statuewise are presented as belonging together cannot be itself explain why we come to believe that they compose something.

solve the problem of reasonableness? One might plausibly take the folk belief in statues and chairs to be justified largely on the basis of intuitions—in particular, intuitions to the effect that atoms arranged statuewise (chairwise, etc.) always compose something. This solution will be available only to the eliminativist who accepts that intuitions are generally reliable and bestow prima facie justification on one's beliefs. Of course, he need not accept that *all* intuitions are veridical and may hold that the intuition that atoms arranged statuewise compose something is incorrect. But, since he thinks that intuitions are reliable in general, he owes us some explanation of why intuition goes wrong in the present case. After all, it is somewhat mysterious that we have clear intuitions that atoms arranged statuewise compose something, even though our concept *compose something* does not apply to atoms arranged statuewise.

One might attempt to explain the source of the intuitional error by arguing that our intuitions about when composition does and does not occur are guided primarily by our interests (pertaining to survival or convenience) in some but not other arrangements of atoms.[163] The eliminativist who wants to employ the present strategy cannot make this move lightly. For if intuition is so easily misguided by our interests, then it cannot be a source of justification. But if intuition is not a source of justification, then the eliminativist has no answer to the problem of reasonableness. So the eliminativist must supply some reason to think that intuitions about when composition occurs are more vulnerable to corruption by our interests than are intuitions about other topics.

One way to ensure that the corrupting influence of human interests does not extend to all intuitions is to show that there is a specific psychological mechanism that is

[163] Hudson (2001, 91-92).

responsible for generating intuitions about when some things compose something, and that this mechanism is especially susceptible to corruption by our interests.[164] For instance, the eliminativist might contend that there is a special psychological mechanism that will yield the intuition that a plurality of things compose something just in case there is some kind F such that (1) one observes that these things are arranged F-wise and (2) one has the kind concept F. Since which particular kind concepts we possess is largely driven by our interests, it would then be plain to see how our interests are poised to affect our intuitions about composition.

There are two problems with this account. The first is that it makes false predictions. Someone might lack the concept *corkscrew* (having never seen or heard of a corkscrew); yet, when presented with one, he will have the intuition that things in the perceived arrangement compose something. But, since he lacks the concept corkscrew, the above account predicts that he will not have an intuition to the effect that things in that arrangement compose something.[165] Furthermore, one may possess certain kind concepts F without having any intuition that things arranged F-wise compose something. Consider, for instance, the concept *trout-turkey*, where an object is a trout-turkey just in case it is composed of a trout and a turkey.[166] Despite having now acquired this concept, we do not now have an intuition to the effect that a trout and a turkey a hundred miles from the trout would compose something. Yet the present account predicts that we should

[164] Christopher Hill (1997, 72-78) employs such a strategy for showing that the modal intuitions underlying the argument against the mind-body identity thesis are unreliable.
[165] One might complain that we *do* have the requisite sortal concept: namely, *appliance*. But one can simply revise the example so that we encounter some item on Mars, radically different from any sort of thing we have ever before encountered, but whose parts and organization plainly exhibit the sort of unity found in trees, statues, etc. Surely one would have the intuition that things in such an arrangement compose something.
[166] Lewis (1991, 8).

have this intuition. Consequently, the proposed mechanism cannot be what underlies our intuitions about composition.

The second problem is more general, and will arise for any attempt to identify a special mechanism underlying intuitions about when composition occurs. Recall that the present strategy for answering the problem of reasonableness presupposes the general reliability of intuition. All serious attempts to explain the reliability of intuitions (or a priori methods generally) explain their reliability in terms of some general grasp of one's concepts.[167] In light of this, it seems unacceptably ad hoc to maintain that intuitions about composition are governed by some special module, while all other intuitions are the result of understanding one's concepts. But if they concede that there is no special module, then they owe us some other explanation of why human interests are poised to corrupt intuitions about composition that does not cast doubt on all other intuitions at the same time.

7. Testimony

Let us consider one final attempt to secure the reasonableness of belief in statues in chairs. Here the idea is that the reasonableness of these beliefs is explained not by appearances or intuitions but rather by testimony. We are told from a young age, by teachers, parents, and other figures of authority that there are statues in the museum, chairs in the cafeteria, and so forth. Beliefs formed on the basis of testimony from a reliable source—or even just from a source not known to be unreliable—are reasonable. Relatedly, as Sider points out, the psychological explanation of why the folk accept false

[167] See, e.g., Bealer (2000) and Peacocke (2005).

ontological claims has a lot to do with "the ontologically unscrupulous nature of natural language … [I]n ordinary life we quantify freely over non-actual objects, and over abstracta, without thinking very hard about whether such objects exist."[168] One might suggest, along these lines, that the reasonableness of the folk belief in statues derives from our immersion in a community in which people speak as if there really are such objects.

This appeal to testimony solves the problem of reasonableness only to have it reappear in a different guise. For it is natural to wonder how this all got started. Consider the first people to allege that there were rocks, mountains, tables, and so forth (i.e., Russell's "cannibals"). Is there any explanation of why *their* beliefs would be reasonable? One might suggest that they found it more convenient to quantify over things that they did not really believe in.[169] But this response is not available to the *in*compatibilist, since the response presupposes that the folk do not genuinely believe that atoms arranged statuewise compose something. Or are we indeed being asked to believe that, unlike present-day folk, our ancestors did not really believe in composite objects? This is hard to believe and, in any case, it is at best unfounded historical speculation.

Finally, and more importantly, we are again left with no explanation as to why these beliefs are so resilient. Merricks seems right that nothing short of heavy-duty philosophical argumentation could expose the falsity of our belief in statues and the like. But why would this be—why wouldn't narrow a priori reflection suffice, given that our concept *compose something* does not apply to atoms arranged statuewise? What stands between the folk and their own concepts?

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[168] Sider (1999b, 333).
[169] Cf. Sider (1999b, 334).

8. Resilience Revisited

We have examined several unsuccessful strategies for handling the problem of reasonableness, but have yet to see any answer to the challenge from folk belief that even purports to answer the problem of resilience. Perhaps eliminativists will complain that I am asking too much in demanding an explanation of the resilience of our pretheoretical beliefs under narrow a priori reflection. After all, narrow a priori reflection cannot by itself reveal the falsity of the folk belief that space is Euclidean or that there is such a thing as absolute simultaneity. Likewise, one cannot be expected to discover the falsity of the naive comprehension axiom (that $x \in \{u: Fu\} \leftrightarrow Fx$) solely on the basis of narrow a priori reflection. And we know that philosophical argumentation is needed to convince one that the set of all natural numbers is no larger than the set of all even numbers—narrow a priori reflection does not suffice. So (says the eliminativist) there is no reason to expect narrow a priori reflection to reveal that atoms arranged statuewise do not compose anything.

The problem with this line of response is that, in each of these cases, there *is* an explanation of why the beliefs survive narrow a priori reflection, but these explanations are not available to the eliminativist. First consider the case of folk beliefs about the geometry of space and the nature of time. Space could have turned out to be Euclidean, and time could have turned out to be such as to allow absolute simultaneity. Consequently, empirical investigation was required to determine whether space and time were in fact as we took them to be. The reason that these beliefs survive narrow a priori reflection is that these are matters that simply cannot be settled a priori. (Likewise for

false folk beliefs about witches, deities, astronomy, and so forth.) This explanation is not available to the eliminativist because the thesis that it is possible for atoms arranged statuewise to compose something is not an empirical matter and presumably can be settled a priori.

Next, consider the false beliefs about the cardinality of infinite sets. Here the explanation seems to be that the concept of infinity is quite elusive, difficult to wrap one's mind around, and one that we are not used to reasoning with. By contrast, there is nothing particularly elusive or complex about the concept *compose*: few notions are as pervasive in our day-to-day conceptual activity as the notion of parthood. (We have already seen, in §3, that the complexity of arguments surrounding composition does not suffice to show that composition is an abstruse and subtle matter about which the folk have no beliefs.) So the present explanation of the survival of false folk beliefs under narrow a priori reflection is likewise unavailable to the eliminativist.

Finally, consider naive comprehension. Here again, there is reason to think that a priori reflection should suffice to settle the matter, but not *narrow* a priori reflection. Narrow a priori reflection, recall, is a priori reflection that is narrowly focused on a particular proposition, without considering auxiliary propositions and arguments that might bear upon the truth of the proposition in question. In particular, narrow a priori reflection precludes consideration of potential counterexamples to the proposition that, for any predicate, there is a set of things of which it is true. It is common for false general claims (such as this one) to seem true so long as most of their instances are true and one has yet to consider relevant exceptions. Since consideration of the counterexamples is the only real means available to beings like us of coming the see that naive comprehension is

false, it is clear why narrow a priori reflection is not sufficient. By contrast, there is no question of there being counterexamples to a concrete-case belief of these or those atoms arranged statuewise that they compose something. The present explanation is available only in the case of beliefs about generalizations, not beliefs about concrete cases.

This helps to bring out an interesting dialectical point. Eliminativism is in large part motivated by the fact that it provides a uniform solution to the puzzles of material constitution. These puzzles can also all be solved by denying that it is impossible for distinct objects to be wholly co-located. Since we pretheoretically believe (at least tacitly) that two things cannot wholly occupy one and the same place, one who adopts the co-location solution faces the challenge from folk belief just like the eliminativist. But the proponent of co-location is in a far better position to answer the challenge from folk belief than is the eliminativist. The belief that co-location is impossible is reasonable because the generalization holds in virtually all cases (a dog and a computer, a table and a water bottle, and so forth). The belief that co-location is impossible is resilient under narrow a priori reflection because (like the belief about naive comprehension) it is a general belief, and cannot be seen to be incorrect without considering potential counterexamples.[170] So co-locationalists, unlike eliminativists, have a plausible solution to the problems of reasonableness and resilience.

The observation that the folk have all sorts of resilient false beliefs does not show that there is no need for the eliminativist to explain the resilience of false folk beliefs about composition. For the resilience of these other false beliefs *can* be explained, and the eliminativist will not always (or perhaps ever) be in a position to help himself to those

[170] Cf. Hirsch (2002a, 113-5) and (2005, 89).

explanations and use them to explain the resilience of beliefs about composition. Concrete case beliefs about whether composition occurs in this or that particular case are fundamentally unlike false beliefs involving general claims, abstruse topics, or a posteriori matters. Rather, the judgment that these or those atoms arranged statuewise compose something is more akin to the concrete-case judgment that Gettier's Smith lacks knowledge, and we *do* expect narrow a priori reflection to reveal the truth or falsity of these kinds of beliefs. The eliminativist must provide some reason to think otherwise.

9. Conclusion

No answer to the challenge from folk belief is satisfactory unless it can solve the problem of reasonableness and the problem of resilience. The failure to solve these problems is not simply a "cost" of a theory, like being disuniform or unparsimonious, which can be excused in light of the theory's various virtues. I have surveyed a number of preliminary attempts to answer these problems and have found none of them to be adequate. There may well be paths open to the eliminativist that I have not examined. My goal has not been to show that there is no way for the eliminativist to answer the challenge from folk belief but only to illustrate how one might attempt—and how one might fail—to solve the problems of reasonableness and resilience underlying the challenge from folk belief. I hope at least to have shown that the challenge cannot be brushed aside simply by observing that we see atoms arranged statuewise, that the beliefs are not "as bad as" purely delusional beliefs, or that intuitions are not always correct.

Nevertheless, I do take these considerations to show that many of the arguments that are made on behalf of eliminativism are unsatisfactory. For most of the arguments

provided by both van Inwagen and Merricks are not positive arguments but rather arguments from elimination (excuse the pun), which proceed by way of identifying the flaws in all alternative answers to various questions and puzzles (e.g., Ship of Theseus, coincidence, causal exclusion, the special composition question) and noting that eliminativism is the only remaining solution. But, on account of its deep conflict with folk belief, eliminativism is just as problematic as the other solutions; and until the position has been adequately defended, any such argument from elimination will be inconclusive. Eliminativists are no doubt well aware of this; their mistake was to underestimate the nature and force of the challenge from folk belief.

I suspect that the considerations raised above can be wielded against many other revisionary theories in metaphysics and beyond. But the challenge from folk belief is far too weak to be used as an all-purpose validation of everything that passes, or has passed, for common sense. False and resilient beliefs in witches, in a young earth, and in the permissibility of slavery have straightforward explanations, so the challenge from folk belief is easily answered in these cases. Nor does the challenge from folk belief provide an insurmountable argument against anti-realism about numbers and other abstracta: not, at least, if reductionist or fictionalist (compatibilist) accounts are tenable. The challenge from folk belief can often be answered. But it *must* be answered by all theories that appear to conflict with folk belief—especially when the answer is not immediately obvious—on pain of leaving unexplained something that cries out for explanation. I hope to have shed some light on how attempts to answer it are to be assessed.

VI

Unrestricted Composition and Restricted Quantification*

> The philosopher advocates a view apparently in patent contradiction to common sense. Rather than repudiating common sense, he asserts that the conflict comes from a philosophical misinterpretation of common language…. I think such philosophical claims are almost invariably suspect. What the claimant calls a 'misleading philosophical misconstrual' of the ordinary statement is probably the natural and correct understanding. The real misconstrual comes when the claimant continues 'All the ordinary man really means is…'.
>
> Saul Kripke 1982, p. 65

Under what conditions do some things compose something? The predominant answer in the literature on composition is the universalist answer: always.[171] The popularity of this answer is somewhat surprising, since it entails that there are such strange fusions as the object composed of my nose and the Eiffel Tower.[172] What is even more surprising is that universalists typically take the view to be entirely compatible with what the folk say in ordinary discourse about material objects. When presented with a bowling ball and a feather, the folk might describe the situation in ways that appear to conflict with universalism, for instance, 'there are only two things on the table' or 'there is nothing partly white and partly black on the table'. Universalists typically insist that that, in such cases, the folk are restricting their quantifiers in such a way as to exclude strange fusions, much as one restricts one's quantifier so as to exclude the beer in the pub

* Thanks to John Bengson, Matti Eklund, Eli Hirsch, Mark Sainsbury, Adam Sennett, and David Sosa.

[171] See, e.g., Cartwright (1975), Quine (1960, 171; 1981, 10), Lewis (1986, 212-3), Heller (1990, 49f), van Cleve (1986/1999, 485-6), Rea (1998), Sider (2001, 121-32), Hudson (2001, 105-12), and Varzi (2005).

[172] More cautiously, universalists are committed *either* to the existence of this fusion or to the nonexistence of one or the other of my nose and the Eiffel Tower (which would be no less surprising).

downtown when one looks in the fridge and says, 'there is no beer'. If the folk are not saying that there are only two things on the table, but rather (e.g.) that there are only two *ordinary* things on the table, what they say is compatible with universalism. Let us call the thesis that, in such cases, the folk restrict their quantifiers in such a way as to exclude strange fusions "restrictivism."[173]

Despite its prima facie implausibility, there are powerful arguments for universalism.[174] By contrast, there is remarkably little evidence for restrictivism, and I will argue that there is no good reason to accept it. The universalist is better advised to accept that the apparent conflict with folk belief is genuine and to try to explain the conflict rather than explain it away.[175]

1. Preliminaries

For ease of exposition, I simply assume in what follows that universalism is correct. On the face of it, the metaphysical view that composition is unrestricted is entirely independent of the linguistic hypothesis that quantifiers are typically restricted in such a way as to exclude strange fusions. Universalism can consistently be combined with any view of what the folk are saying in discourse about material objects—including the natural view that they are saying exactly what they seem to be saying—and

[173] Although explicit endorsements of restrictivism in the literature are rare—and defenses of it rarer still—the view is widespread and is commonly cited as the standard universalist account of the apparent conflict with folk belief: see Lewis (1986, 213), Ernest Sosa (1999, 142), Ted Sider (2001, 218; 2004, 680), Hirsch (2002a, 111-2), Rosen and Dorr (2002, 155-7), Varzi (2003, 213-4), López de Sa (2006, 399), and Markosian (forthcoming).
[174] See, especially, Sider (2001, 121-32).
[175] Cf. Merricks (2001, 162-85) on explaining, rather than explaining away, the apparent conflict between eliminativism and folk belief.

restrictivism can consistently be combined with any theory of composition.[176] Some, however, might hold that the fact that there are strange fusions can itself somehow serve as a reason for believing that the folk are restricting their quantifiers to exclude them, even though these fusions have been altogether overlooked by the folk. I consider responses to this effect in §3.

There are various ways of understanding the phenomenon of tacit quantifier domain restriction and, in particular, whether it is a semantic or a pragmatic phenomenon.[177] I will assume (and already have been assuming) that quantifier domain restriction is a semantic phenomenon: that the restriction enters into the content of the sentence uttered. On the pragmatic approach, the tacit restriction is manifested not in what is said but, rather, in what is conveyed. Restrictivists who accept the pragmatic approach will admit that universalism is incompatible with what the folk say—since what is said is not suitably restricted—but will hold that it can nevertheless be reconciled with what they intend to convey. The objections that I raise against restrictivism apply equally in a setting in which quantifier domain restriction is understood to be a pragmatic phenomenon.

Since restrictivism is a thesis in semantics—not a philosophical thesis, which can be evaluated by a priori methods—some may wonder whether it is appropriate to proceed without empirical investigation. I believe that it is. It is standard practice in linguistics to rely on one's own mastery of the language to assess sentences for truth or falsity,

[176] One might wonder what reason there would be for someone who does not accept universalism to embrace a restrictivist thesis about folk discourse, but this only speaks to the main point of the paper, namely, that there is no independent evidence supporting restrictivism.

[177] See Stanley and Szabó (2000) for discussion of the various approaches to quantifier domain restriction.

grammaticality and felicitousness, multiple readings, elided clauses, tacit restrictions, and so forth. This, of course, is not to say that conclusions reached from the armchair about folk discourse cannot be overturned by subsequent field work; but such field work need not be the starting point. In any event, if this is not an appropriate way to proceed, then that cuts equally against restrictivists, for they themselves venture a semantic hypothesis without citing any empirical results.

Some might wonder why we should care at all about whether metaphysical theories can be reconciled with what the folk say. A natural proposal is that what the folk say matters because what they say reflects their unadulterated pretheoretical beliefs and intuitions. These beliefs and intuitions matter because they are the stuff that counterexamples are made of. In §4, I consider whether restrictivism can be adapted to resolve the more fundamental conflict between universalism and the intuitions that seem to tell against it. Until that point, I will assume (in the restrictivist's favor) that the folk have no beliefs or intuitions one way or the other with respect to whether these strange fusions exist.[178] Accordingly, when I speak of the folk as excluding strange fusions from their domain of quantification, this need not be understood as requiring that they have beliefs about, or even consciously entertain, strange fusions.

[178] Restrictivists presumably will not say that the folk believe that there are no strange fusions, for this is to admit that there is a genuine conflict between universalism and folk belief, which is at least as bad as (and presumably worse than) a conflict with what the folk say. And the view that the folk positively do (already) believe in such strange fusions as the thing composed of my nose and the Eiffel Tower is wholly implausible.

2. Finding Evidence for Restrictivism

The folk say things which seem to suggest that they do not take there to be strange fusions. What explains their behavior? The obvious answer is that the only possible reasons for believing in these strange things are available only to those who engage in serious philosophical reflection. The folk mistakenly insist that there are only two things on the table and deny that there is anything partly black and partly white on the table, but this is neither surprising nor foolish, for they have no reason to believe in strange fusions. There seems to be no more need to reinterpret folk discourse in light of the discovery that there are strange fusions than there is to reinterpret pre-Copernican discourse in light of the discovery that the earth goes around the sun (more on this in §3).

Restrictivists provide a more complicated explanation, for they agree that the folk do not possess any reasons for believing in strange fusions—which evidently is already sufficient to explain their behavior—but then go on to propose that the folk tacitly restrict their quantifiers in such a way as to exclude fusions. Not only is the explanation more complicated; it simply lacks prima facie plausibility. Of course, it is beyond doubt that we do restrict our quantifiers in discourse about material objects. For instance, we typically restrict our quantifiers to exclude the parts of highly visible objects (e.g., we count the table but not its legs when we count up the wooden things in the room).[179] This is something that we do automatically and without conscious effort, but all it takes is a moment's reflection to see that this is something that we do. By contrast, it not clear on

[179] The restrictivist presumably will not agree that we restrict our quantifiers in this way, since he holds that tables and other things in the domain of quantification are parts of highly visible objects (e.g., the strange fusions of noses and tables). The point, however, is that the anti-restrictivist need not deny that we sometimes restrict our quantifiers, and that in some cases there are genuine reasons for postulating the relevant restrictions.

reflection that we have also been restricting our quantifiers so as to exclude strange fusions—even once the existence of those strange fusions is brought to our attention—any more than it seems to us that we had been restricting our quantifiers so as to exclude extraterrestrial trees in saying 'there are no talking trees' when we find out that there are talking trees on some distant planet.

Furthermore, the postulation of the indicated restriction seems to be an explanatory dangler. In familiar cases of quantifier domain restriction, the postulation of the relevant restriction does genuine explanatory work. Consider the semantic hypothesis that Joe is restricting his quantifier so as to exclude beers that are not ready at hand when he looks in the fridge and says 'there is no beer.' First, it does not seem to follow from what Joe said that there is no beer at the pub. The indicated restriction to items that are ready at hand would explain the absence of the entailment. Second, Joe knows full well that there is beer at the pub downtown, so postulating a restriction to beers that are ready at hand allows one to explain his linguistic behavior without taking him to be asserting something that he knows to be false. Relatedly, when he finds that his remarks have been at face value ("There's no beer *anywhere*, Joe?"), he responds not as one who takes himself to have been mistaken but as one who takes himself to have been misunderstood.[180] The hypothesis that what he said was that there is no beer ready at hand would explain this reaction.

All of these explananda—these standard marks of a quantifier's being restricted so as to exclude a certain range of items—are missing in case of strange fusions. It does

[180] Likewise, one who says 'there is only one white thing on the table' knows full well that the feather has parts that are white, and will take himself to be the victim of a deliberate misunderstanding if one reminds him that he neglected to count those parts.

seem to follow from an assertive utterance of 'the feather is not part of anything on the table' that the feather is not part of any unnoticed thing on the table. Since (as we are supposing) the folk have no beliefs one way or the other about whether there are strange fusions, one can take their remarks at face value without taking them to be saying anything that they know to be false. And there is no indication that the folk take themselves to have been misinterpreted or misunderstood when they find that their utterances have been taken at face value (e.g., "The feather isn't part of *anything* on the table??).[181] Positing a tacit restriction that excludes strange fusions seems to do no explanatory work. There are often clear reasons for complicating the semantics of folk discourse by supposing that quantifier domains are tacitly restricted in certain ways; we should not further complicate the semantics with additional restrictions unless there are comparable reasons for doing so.

(There is even some degree of semantic evidence supporting the Lewisian hypothesis that we typically restrict our quantifiers to exclude nonpresent and nonactual entities. For at times we seem willing to quantify over such entities, as in 'There are many people who have died for their cause' and 'There are many things that we feared as children that we no longer believe in'. Of course, there are various ways of understanding such utterances. But the point is just that there is not even this minimal evidence for restrictivism and that not all seemingly revisionary postulations of tacit domain restrictions are as unmotivated as restrictivism.)

[181] See Hirsch (2002a, 111-12) for further discussion of this "retraction test" for quantifier domain restriction. Trenton Merricks (2001, 166) makes a similar point against the eliminativist who holds that we speak loosely when we say such things as 'there are tables nearby'.

So is there any linguistic or behavioral evidence for restrictivism? Gideon Rosen and Cian Dorr point out that, when informed that they failed to count the ball "plus" the feather, the folk will perhaps respond 'Well, if you count *that* as a thing, then I suppose there must be three things on the table after all'; and they cite this as evidence that the folk are restricting their quantifiers so as to exclude strange fusions.[182] But, *pace* Rosen and Dorr, this need not (and probably should not) be understood as any kind of retraction or indication that the speaker takes himself to have been misunderstood. The exchange is most straightforwardly understood as involving a kind of presuppositional "discommodation."[183] You can participate in a conversation about the happiness of the man in the corner, and may even join other parties to the conversation in referring to him as 'the man drinking a martini', even though you do not believe that the drink in his hand is a martini. But rather than being uncooperative—in part because you realize that they *might* know something that you do not, and in part because you do not care whether it is a martini—you play along. Likewise, the above assertion is more naturally interpreted as the speaker's realizing that his informant has bizarre views about what kinds of things there are and then playing along in the spirit of cooperation—in part because he realizes that the philosopher might know something that he does not, and in (large) part because he does not care whether there is really some third thing.[184]

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[182] Rosen and Dorr (2002, 156-7).
[183] See Bonomi (2006, 114f).
[184] Compare: Bill lays out some objects on the table and asks Adam to count the red ones. Adam says that there are two. Bill then points to an orange object and reminds Adam that he has not counted that one. Adam may respond 'Well, if you count that as red, then I suppose there are three red things'. Adam is just playing along.

One might complain that, in both this case and the one in the text, the speaker uses a demonstrative expression 'that', which suggests that he takes there to be such an object. But the use of the demonstrative is inconsequential. Prompted by Bill to count up

We do, of course, often employ a restricted use of 'thing', on which holes, events, numbers, and other oddities in the folk ontology are not counted as things. Perhaps what Rosen and Dorr have in mind is that the indicated reaction is evidence that we typically restrict our quantifiers to exclude entities that are not things in this narrow sense of 'thing'. But, while the folk deny that birthday parties are things, they readily admit that there is *such a thing as* a birthday party. By contrast, upon telling the folk that a ballfeather is that, if anything, that has a bowling ball and a feather as parts, they will readily admit that of course there is such a thing as a ballfeather. So the usual marks of being excluded as a result of failing to fall under the narrow use of 'thing' are missing in the case of strange fusions.

It may be that the folk (like many philosophers) will take back what they said upon becoming convinced that, if one countenances scattered objects at all, then there can be no principled reason for excluding strange fusions.[185] But this sort of retraction cannot serve as the kind of evidence we are looking for: what the folk are willing to say after becoming convinced that there are fusions is no indication of what they were saying before becoming convinced. Nor is the fact that they can be convinced that there are fusions any indication that they were restricting their quantifiers, any more than the fact that they can be convinced of mereological essentialism (and just as easily) is any indication that they are speaking loosely in saying 'this tree used to have fewer branches'. So we still have yet to find any serious evidence for restrictivism.

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the different kinds of horses, Adam says "there are exactly ninety kinds of horses." Bill reminds him that he neglected to count unicorns. Bill does not believe in unicorns, nor was he restricting his quantifiers to exclude them, but may well respond: "If you count those as horses, then I suppose there are ninety-one different kinds."

[185] Cf. Sider (2004, 680) on what his students say after "innocent coaching."

The restrictivist might try to appeal to the fact that the folk have no beliefs one way or the other about whether strange fusions exist as positive evidence that strange fusions are typically excluded from our domain of quantification.[186] But it is hard to see why, for we do not in general take our quantifiers to range only over those things that we believe to exist. When Joe says 'there is no beer', not realizing that there are some Coronas hidden in the vegetable drawer, we take him (and he subsequently takes himself) to have said something false—not to have said something true and restricted so as to exclude the contents of the vegetable drawer. Nor is the domain of quantification ordinarily restricted to *kinds* of things that the speaker takes to exist. When Joe says 'nothing can travel faster than ten thousand miles per hour', we again ordinarily take him (and he takes himself) to have said something false, even though we know that he has never heard of the sorts of (microscopic) things that do exceed these speeds. So the fact that the folk have no beliefs one way or the other about whether strange fusions exist by itself is no evidence that they are not included in the ordinary domain of quantification.

In the absence of linguistic, psychological, or behavioral data, the postulation of the indicated restriction looks to be entirely unmotivated. More importantly, if there is no special reason to think that we restrict our quantifiers to exclude strange fusions, there will be no good reason to favor restrictivism over competing semantic hypotheses. For instance, one might instead hold that, while the folk are not excluding strange fusions when they say 'there are only two things', they are (as van Inwagen suggests) speaking

[186] Alternatively, one might hold that we lack the concepts needed to talk and think about strange fusions, and that this can serve as a grounds for accepting restrictivism. But it seems that we do have all the requisite concepts for thinking about strange fusions, simply insofar as we can wonder whether there is anything whose parts are the ball and the feather.

loosely when they say 'there are tables nearby'.[187] Or that what they say is that according to the folk-ontological pretense there are tables nearby.[188] Or that, without realizing it, they systematically insert and omit negations by a slip of the tongue, and what they mean to say is that there are *not* only two things on the table. Or that they are saying exactly what they seem to be saying: that there (really!) are tables nearby and that there is nothing (at all!) partly black and partly white on this table. It is unreasonable to prefer the restrictivist interpretation over these competing interpretations solely on the grounds that *if* it is correct then there is no conflict between universalism and folk discourse, for this is nothing more than wishful thinking.

3. Arguing From Universalism to Restrictivism

I have argued that there is no linguistic, psychological, or behavioral evidence that we typically restrict our quantifiers so as to exclude strange fusions. But it remains open to the restrictivist to hold that something external to the speaker determines how his quantifiers are restricted. After all, it is by now well known that the content of our utterances is not determined solely by states internal to the speaker.[189] Perhaps the existence of strange fusions can itself be cited as evidence for restrictivism. But how can the fact that they exist serve as a reason for thinking that they are typically excluded from our domain of quantification?

[187] Cf. van Inwagen (1990, 98-114).
[188] Cf. Rosen and Dorr (2002, 168-71).
[189] See, especially, Kripke (1972), Putnam (1975), and Burge (1979).

a. Charitable Interpretation

One possible explanation is that, in light of the truth of universalism, the principle of charity in interpretation compels us to accept restrictivism. For if we interpret the folk in such a way that they do not employ the indicated restriction, then we must understand them as saying (or at least as being disposed to say) a great many false things. The idea would then be that restrictivism supplies a far more charitable interpretation, for it takes the folk to be speaking truly. So, ceteris paribus, the restrictivist interpretation is to be preferred.

But, as a number of authors have observed, charity requires only that an interpretation rationalizes utterances, not that it verifies them.[190] An interpretation on which speakers say and believe a great many false things is not in the least uncharitable if their mistakes are perfectly intelligible, given their evidence. Is it irrational for the folk to say that there are only two things on the table, despite the fact that there is a third thing on the table, namely, the fusion of the ball and the feather? Not at all. The only known reasons for thinking that this third thing exists are highly theoretical, so the philosophically uniformed folk can hardly be charged with irrationality for not having realized that it exists. So the principle of charity, properly understood, supplies no reason for accepting restrictivism.

Achille Varzi raises a similar point in his critique of Peter van Inwagen's attempted reconciliation of folk discourse and the elimination of medium-sized dry

[190] See Grandy (1971, 440f), Lewis (1974, 336-7), Wiggins (1980, 198-200), Hirsch (2002a, 105), and Varzi (2002, 61-5). As Wiggins puts the point, the appropriate notion of charity "founds interpretation not in maximization but in *explanation*" (1980, 199).

goods.[191] Varzi observes that charity demands nonliteral interpretation in such cases only if there is reason to think that the speaker is "part of the gang." For instance, whether charity requires that we take someone to be speaking loosely in saying 'the sun moved behind the elms' depends in part on whether the speaker has informed views about astronomy. Charity does not automatically require that we find a way to understand him as saying or conveying something true, especially if he is uninformed or misinformed; after all, he might really believe that the earth is stationary. Charity does require that we take van Inwagen and other avowed eliminativists to be speaking loosely when they say such things as 'there is a table nearby'. By contrast, to take the folk to be speaking loosely when they utter these words is not a charitable interpretation; it is plain misconstrual. There is no reason to take the folk to be part of the eliminativist gang, and there similarly appears to be no reason to take the folk to be part of the universalist gang.

b. The Best Candidate Theory

Alternatively, one might try to invoke the Lewisian "best candidate" theory of content in defense of restrictivism.[192] According to the best candidate theory, the semantic content of our utterances is determined in part by our linguistic behavior and dispositions and in part by the intrinsic eligibility of candidate contents. The correct semantic theory is the one that finds the best balance between assigning maximally eligible contents and respecting our use of the relevant utterances. The suggestion would then be that restrictivism provides a better balance of use and eligibility than do

[191] Varzi (2002, 65).
[192] See Lewis 1983 and 1984.

interpretations on which strange fusions are not excluded from the domain of quantification by some tacit restriction.

The appeal to the best candidate theory is simply a nonstarter if "respecting our use" is understood in terms of charitably interpreting the relevant utterances. For, as we have just seen, restrictivism is no more charitable than interpretations that do not postulate the relevant restriction. Consequently, restrictivist and nonrestrictivist interpretations will be on a par with respect to use, so understood. But the candidate contents that incorporate this restriction will be more complex, and therefore less natural and eligible, than those that do not. So, if the best candidate theory is to be of any help to the restrictivist, "respecting use" must be understood in terms of verifying a certain range of utterances—for instance, the "platitudes" of folk theory.[193]

But even so understood, there is no clear indication that the best candidate theory favors restrictivism. Whether it does depends in large part upon the intrinsic eligibility of the restriction that is needed to secure the truth of the relevant sentences of folk discourse. Its eligibility (as Lewis understands it, at any rate) will, in turn, be a function of the complexity and naturalness of the relevant restriction. The problem is that the obvious candidates for a natural restriction all fail to respect other aspects of use. For instance, one might suggest that the quantifiers are restricted to *ordinary* things. But we

[193] If the best candidate theory is to be at all plausible, there must be some restriction on the range of utterances whose verification counts in favor of an interpretation; intuitively, that an interpretation verifies the pre-Copernican utterances of 'the sun goes around the earth' is not even a pro tanto reason for favoring that interpretation. So the envisaged restrictivist would have to assume, further, that the utterances that he wishes to reconstrue (e.g., 'nothing on the table is partly white and partly black', 'the feather is not part of anything on the table) are in this privileged class of utterances that need to be verified by a "use-respecting" interpretation. I will simply grant that they are; to evaluate whether this is at all plausible would require an investigation into the motivations of this kind of best candidate theory that would take us far beyond the scope of this paper.

plainly do quantify over highly nonordinary things (bizarre works of art, strange organisms, etc.) so long as they exhibit the right degree of unity; so, supposing that this restriction is in effect, we miscount when we count such things. Similarly, a restriction to things whose parts exhibit a high degree of unity would fail to verify what we say when we count such scattered entities as baseball card collections, Michigan, and tokens of the letter 'i'. Likewise for a restriction to things for which we have sortal expressions, for even the restrictivist will agree that one would be speaking falsely in saying 'There is nothing on the table' when presented with an assortment of strange Martian items that resist classification. And we have already seen (in §2) that taking quantifiers to be restricted to things that the speaker believes in also leads to misconstruals of folk discourse.

It would seem, then, that the only way to specify a restriction that respects all of these aspects of use is by "brute force"—that is, by building into the semantics of the sentence the highly complex, unwieldy relation that underwrites our ordinary judgments about whether some things compose anything.[194] In that case, it would be far from clear that the use/eligibility calculation would favor the use-respecting restrictivist interpretation and its monstrous restricted quantifier over the more straightforward and eligible interpretation on which quantifiers are not restricted in such a ways as to exclude strange fusions.

Of course, from the perspective of the best candidate theory, the fact that the more natural restrictions fail to verify all of the platitudes of folk discourse does not by itself

[194] Both commonsense ontologists and their critics will agree that there is almost certainly no uniform or elegant way to capture the conditions under which the folk (ostensibly) take some things to compose something.. See, e.g., van Inwagen (1990), Hirsch (1993b), Horgan (1993), Markosian (1998), and Johnston (2002, 147).

reveal those proposals to be incorrect. For the superior eligibility of a given restriction might counterbalance these shortcomings. Or it might not. I am aware of no way of determining whether, among all of the various ways in which our quantifiers might be restricted, the restriction that best balances use and eligibility is one that excludes strange fusions from the domain of quantification. Without special reason for thinking that the use/eligibility calculations favor a restrictivist interpretation, to suppose that they do is simply wishful thinking.

There are further problems with holding the nature of the restriction hostage to the use/eligibility calculations in this way. Suppose, for instance, that the calculations favor a restriction to things believed to exist by the speaker. In that case, the proponent of the best candidate theory is committed to serious violations of privileged access.[195] Consider the case described in §2, in which Joe says 'nothing travels faster than ten thousand miles per hour'. He will deny that what he says is only that nothing that he believes in travels faster than ten thousand miles per hour. He recognizes that there probably are all sorts of things that exist without his knowing it, and he believes that what he is saying would turn out to be false if any of them turn out to travel faster than ten thousand miles per hour. On the present proposal, he would then be mistaken about what he is saying, and cannot manage to say what he is thinking. (Or, even worse, he does say what he is thinking, but it seriously mistaken about what he is thinking and what he believes.) Relatedly, the present strategy undercuts one central motivation behind restrictivism, namely, to dissolve the apparent conflict between universalism and folk belief. The restrictivist who

[195] See Stanley (2001, 47) for a related point concerning fictionalist strategies for reconciling ordinary discourse with revisionary metaphysical theses.

opts for the present strategy does not dissolve the conflict; he merely relocates it as a conflict between restrictivism and folk belief.[196]

4. Rephrasing Intuitions

The trouble with the restrictivist strategy for conflict resolution becomes even more apparent when we turn our attention from the conflict between universalism and ordinary discourse to the conflict between universalism and our pretheoretical beliefs and intuitions. Intuitively, a bowling ball and a feather sitting next to each other on a table do not compose anything. Since universalism entails that they do compose something, universalism has counterintuitive implications. When a theory has counterintuitive implications at the level of concrete cases (vs. general principles), we say that the theory is open to *counterexamples*. Virtually everyone agrees that potential counterexamples are a serious problem for any theory.[197] There is a long list of theories that are widely held to have been refuted by intuitions of just this kind: logical behaviorism, the JTB analysis of knowledge, Fregean descriptivism, and individualism about semantic and mental content, to name only a few. But one virtually never finds any mention of counterexamples in the

[196] One might venture a more direct argument from universalism to restrictivism: "Universalism is correct. In the envisaged scenarios, such sentences of folk discourse as 'there are only two things on the table' are true. Restrictivism provides the best explanation of how these sentences can be true, given the correctness of universalism." But it seems to be getting things the wrong way round to judge whether the relevant sentences are true or false *before* determining what it is that they mean. Plausibly, the propositions expressed by sentences are the primary objects of knowledge, and any knowledge that we have of the truth or falsity of the sentences that express them is entirely derivative.

[197] Weatherson is an exception (see his 2003). But his argument presupposes a best-candidate theory of content which, as we have seen, fails to render any clear verdict regarding restrictivist interpretations of folk discourse.
invokes the best candidate theory of content in a way that renders it unavailable to the restrictivist, for the reasons given in the previous section.

literature on universalism, the real issue having been eclipsed by the less fundamental issue of apparent conflict with things that the folk are inclined to say.[198]

Can the restrictivist strategy be adapted to handle the objection that universalism is open to counterexamples? That is, can the restrictivist strategy be adapted so as to reconcile universalism with the intuitions that seem to tell against it? Universalists might suggest that philosophers themselves restrict their quantifiers when they report the alleged counterexamples, for instance, that they are in fact saying that there is no *ordinary* thing composed of the ball and the feather. But this is wholly implausible: since the restricted claim so obviously is not a counterexample to universalism, it is uncharitable in the extreme to suppose that this is what fellow philosophers claim and believe to be a counterexample.

Alternatively, the universalist might concede that philosophers are making the unrestricted claim that the ball and feather do not compose anything, but hold that they are incorrectly reporting their intuition. For instance, one might hold that no one actually has the intuition that there is nothing composed of the ball and feather: we have only the restricted intuition that there is no *ordinary* thing composed of the ball and the feather, and philosophers have been mistaking the latter for the former. In that case, although there may be a conflict between universalism and what philosophers come to believe on the basis of their intuitions, there would be no genuine conflict between universalism and the intuitions themselves, and hence no counterexamples to universalism.

[198] To my knowledge, Markosian is the only philosopher to have used the word 'counterexample' in print in connection with the problems facing universalism; see his (1998) and (forthcoming).

Is this psychological hypothesis at all plausible? Occasionally, there is a strong case to be made that philosophers are misreporting their intuitions. Kripke argued persuasively that we sometimes mistake intuitions of epistemic possibility for intuitions of metaphysical possibility.[199] Many who initially reported having the intuition that it could have turned out that water lacked hydrogen found it plausible that they had been misreporting a (veridical) intuition to the effect that one could have been in a phenomenologically indistinguishable situation in which some water-like substance lacked hydrogen. Had Kripke's suggestion not seemed plausible on reflection, there would have been no more reason to think that we were misreporting the anti-Kripkean intuitions than that we were correctly reporting the anti-Kripkean intuitions and misreporting the pro-Kripkean intuitions.

In the present case, by contrast, the intuition is robust; it persists after distinctions about restricted and unrestricted quantification have been made. In this way, the case of the ball and the feather is unlike Kripke's cases.[200] We do not find it plausible on reflection that we have been confusing restricted and unrestricted claims, and so there are no serious grounds for holding that we are. Moreover, in Kripke's case, we had intuitions pointing in opposite directions, which was why we suspected in the first place that some intuition was being misreported. In the present case, however, we do not have pro-universalist intuitions in addition to our anti-universalist intuitions. So we also lack any prima facie reason for thinking that the anti-universalist intuitions are being misreported.

Universalists might try to dispel the invidiousness of the suggestion that their colleagues are unable to distinguish between restricted and unrestricted propositions by

[199] Kripke (1980, 103-5).
[200] Cf. Sider (2001, 183) on anti-eliminativist intuitions.

insisting that the contents of these intuitions are inscrutable. One cannot tell, by introspection alone, whether one is having the restricted or unrestricted intuition. But if these intuitions truly are inscrutable, even to the trained eye, there is no better reason to think that our anti-fusion intuitions are misreported than there is to think that our anti-fusion intuitions are correctly reported while our pro-table intuitions are misreported or, indeed, that all of our intuitions about composite objects are correctly reported. Indeed, the situation is worse than that, for the present proposal calls into question all arguments by counterexample. Perhaps the intuition was only that Gettier-man does not know *with certainty* that the man who gets the job has ten coins in his pocket. Or perhaps the apparently pro-Kripkean intuition was only that there is no *earthly* water on twin-earth. The restrictivist may take some comfort in the claim that, for all we know, we are misreporting our intuitions; but to then conclude that we are in fact misreporting these intuitions is again just wishful thinking.

Universalists might concede that the philosopher does have the suitably unrestricted intuition that there is (absolutely) nothing composed of the ball and the feather, but contend that philosophers have this intuition only because their intuitions have been corrupted by too much theory. But there seems to be no more reason to think that these intuitions are adulterated than there is to think that any other intuitions are adulterated. There is no indication whatsoever that these intuitions diverge from the unadulterated intuitions of the folk. (And is this not the pot calling the kettle black? After all, the only people who seem not to find the universalist thesis counterintuitive are those who have been exposed to the *arguments* against restricted composition.)

Finally, the universalist might concede that even the folk have the suitably unrestricted intuitions, but hold that even the folk's intuitions are theoretically adulterated, namely, by "folk ontology." But this puts the restrictivist in a deeply unstable dialectical position. First, all intuitions are thereby called into question. For if folk ontology is a source of corruption, then presumably so must be the folk epistemology that guides our intuitions about Gettier cases, and so on for twin earth, multiple realizability, and the like. Second, if the restrictivist concedes that the folk have intuitions that contradict universalism, it is more difficult than ever to see what is to be gained by postulating the relevant restriction: for if there is a conflict even with folk belief and intuition, it would seem that there is nothing to be gained in claiming that at least what the folk *say* is compatible with the existence of strange fusions.

5. Conclusion

One often hears it said in conversation about universalism that the apparent conflict with folk discourse poses no serious problem, for the universalist can just say that the folk are restricting their quantifiers. What I have tried to suggest is that this is not something that the universalist can "just say." Rather, this is a substantive semantic hypothesis, which stands in need of justification, and for which there seems to be no evidence.

Restrictivists are not alone in trying to reconcile revisionary metaphysical theories with discourse about material objects. For instance, many philosophers (but no linguists, to my knowledge) have endorsed the semantic hypothesis that such English sentences as 'there are tables in the next room', 'this piece of paper exists now', or 'this tree had fewer

braches last year' have two uses in English: a "loose and popular" use on which they say something obviously true, and a "strict and philosophical" use on which they express substantive philosophical claims.[201] Others have argued that there is a tacit pretense operator at work in our discourse about material objects: what we say in uttering 'there are tables in the next room' is that according to the folk ontology there are tables in the next room.[202] These other reconciliatory strategies are beset by the same problems facing the restrictivist, for there seems to be no more evidence for these semantic hypotheses than there is for restrictivism.[203] Moreover, the abundance of revisionary semantic hypotheses only increases the dialectical instability (mentioned at the close of §2) of favoring one over the others in absence of clear evidence in favor of the preferred hypothesis.

I strongly agree with John Hawthorne and Michaelis Michael that reconciliatory strategies have been "badly abused."[204] And I agree with Kripke (quoted in the epigraph) that these claims are almost invariably suspect—though it is crucial to recognize that, *pace* Kripke, these are linguistic hypotheses, not philosophical claims. There seems to be a widespread methodological assumption that reconciling revisionary metaphysical claims with what the folk say requires nothing more than providing a systematic reinterpretation of the relevant domain of folk discourse. It has been all too common to put forward reconciliatory semantic hypotheses, which depart—sometimes drastically—

[201] See Peter van Inwagen (1990, 100-3), Mark Heller (1990, 12-14), and Roderick Chisholm (1973, 92-104), respectively.
[202] Rosen and Dorr (2002, 168-71).
[203] See Hirsch (2002a, 109-11) on the lack of evidence that we speak loosely when we talk about persistence through change, and Merricks (2001, chapter 7) on the lack of evidence that we speak loosely when we talk about tables.
[204] See their "Compatibilist Semantics in Metaphysics' (1996).

from straightforward interpretations of discourse, without citing any evidence in their favor. But unless clear evidence can be produced to support of these departures from interpretations that take ordinary discourse at face value, there is little reason to take seriously any of the attempts to show that revisionary ontological theories are consistent with folk discourse about material objects.

Bibliography

Barnes, Elizabeth (manuscript), 'What is Ontic Vagueness?'.

Barnett, David (forthcoming), 'The Simplicity Intuition and Its Hidden Influence on Philosophy of Mind', *Nous*.

Bealer, George (1982), *Quality and Concept* (Oxford: Oxford University Press).

Bealer, George (2000), 'A Theory of the A Priori', *Pacific Philosophical Quarterly* 81: 1-30.

Bealer, George (2002). 'Modal Epistemology and the Rationalist Renaissance', in Tamar Szabó Gendler and John Hawthorne (eds.), *Conceivability and Possibility*, (New York: Oxford University Press), 71-125.

Bealer, George (2006), 'A Definition of Necessity', *Philosophical Perspectives* 20: 17-39.

Benardete, José A. (1993), 'Real Definitions: Quine and Aristotle', *Philosophical Studies* 72: 265-82.

Bennett, Karen (2004), 'Spatio-Temporal Coincidence and the Grounding Problem', *Philosophical Studies* 118: 339-71.

Bonomi, Andrea (2006), 'Truth and Reference in Context', *The Journal of Semantics* 23: 107-34.

Burge, Tyler (1979), 'Individualism and the Mental', *Midwest Studies in Philosophy* 4: 73-121.

Burke, Michael B. (1992), 'Copper Statues and Pieces of Copper: A Challenge to the Standard Account', *Analysis* 52: 12-17.

Burke, Michael B. (1994), 'Preserving the Principle of One Object to a Place: A Novel

Account of the Relations Among Objects, Sorts, Sortals, and Persistence Conditions', *Philosophy and Phenomenological Research* 54: 591-624.

Burkhardt, Hans and Dufour, Carlos A. (1991), 'Part/Whole I: History', in Hans Burkhardt and Barry Smith (eds.), *Handbook of Metaphysics and Ontology, vol. 2* (Munich: Philosophia Verlag), 663-73.

Cartwright, Richard (1975), 'Scattered Objects', in Keith Lehrer (ed.), *Analysis and Metaphysics* (Boston: Reidel Publishing Company).

Chisholm, Roderick M. (1976), *Person and Object*, (London, George Allen and Unwin Ltd).

Chisholm, Roderick (1991), 'On the Simplicity of the Soul', *Philosophical Perspectives* 5: 167-81.

Cruse, D. A. (1979), 'On the Transitivity of the Part-Whole Relation', *Linguistics* 15: 29-38.

Davidson, Donald (1974), 'On the Very Idea of a Conceptual Scheme', *Proceedings and Addresses of the American Philosophical Association* 47: 5-20.

Dorr, Cian (2005), 'What We Disagree About When We Disagree About Ontology', in Mark Kalderon (ed.), *Fictionalism in Metaphysics* (Oxford: Clarendon Press), 234-86.

Eklund, Matti (2006), 'Neo-Fregean Ontology', *Philosophical Perspectives* 20: 95-121.

Elder, Crawford L. (2004), *Real Natures and Familiar Objects* (Cambridge: MIT Press).

Evans, Gareth (1978), 'Can There be Vague Objects?', *Analysis* 38: 208.

Fine, Kit (1994a), 'Compounds and Aggregates', *Nous* 28: 137-158.

Fine, Kit (1994b), 'Essence and Modality', *Philosophical Perspectives* 8: 1-16.

Fine, Kit (2000), 'A Counter-example to Locke's Thesis', *Monist* 83: 357-61.

Fine, Kit (2003), 'The Non-identity of a Thing and its Matter', *Mind* 112: 195-234.

Fine, Kit (2005), *Modality and Tense*, (Oxford: Oxford University Press).

Fine, Kit (2006), 'Arguing for Non-identity: A Response to King and Frances', *Mind* 115: 1059-82.

Frances, Bryan (2006), 'The New Leibniz's Law Arguments for Pluralism', *Mind* 115: 1007-21.

Ginet, Carl (1985), 'Plantinga and the Philosophy of Mind', in James E. Tomberlin and Peter van Inwagen (eds.), *Alvin Plantinga* (Dordrecht: D. Reidel), 199-223.

Goodman, Nelson (1955), *Fact, Fiction, and Forecast*, (Indianapolis: Bobbs-Merrill).

Goodman, Nelson (1978), *Ways of Worldmaking*, (Indianapolis: Hackett).

Graff, Delia (2000), 'Shifting Sands: An Interest-Relative Theory of Vagueness', *Philosophical Topics* 28: 45-81.

Grandy, Richard (1973), 'Reference, Meaning, and Belief', *The Journal of Philosophy* 70: 439-52.

Hawley, Katherine (2002), 'Vagueness and Existence', *Proceedings of the Aristotelian Society* 102: 125-140.

Hawthorne, John and Cortens, Andrew (1995), 'Towards Ontological Nihilism', *Philosophical Studies* 79: 143-165.

Hawthorne, John and Michael, Michaelis (1996), 'Compatibilist Semantics in Metaphysics: A Case Study', *Australasian Journal of Philosophy* 74: 117-134.

Heller, Mark (1990), *The Ontology of Physical Objects: Four-Dimensional Hunks of Matter* (New York: Cambridge University Press).

Hill, Christopher S. (1997), 'Imaginability, Conceivability, Possibility and the Mind-Body Problem', *Philosophical Studies* 87: 61-85.

Hirsch, Eli (1982), *Concept of Identity* (New York: Oxford).

Hirsch, Eli (1993a), *Dividing Reality* (New York: Oxford).

Hirsch, Eli (1993b), 'Peter van Inwagen's *Material Beings*', *Philosophy and Phenomenological Research* 53: 687-691.

Hirsch, Eli (2002a), 'Against Revisionary Ontology', *Philosophical Topics* 30: 103-127.

Hirsch, Eli (2002b), 'Quantifier Variance and Realism', *Philosophical Issues, Realism and Relativism* 12: 51-73.

Hirsch, Eli (2004), 'Sosa's Existential Relativism', in John Greco (ed.), *Ernest Sosa and His Critics* (Malden: Blackwell Publishing), 224-32.

Hirsch, Eli (2005), 'Physical-Object Ontology, Verbal Disputes, and Common Sense', *Philosophy and Phenomenological Research* 70: 67-97.

Hoffman, Joshua and Rosenkrantz, Gary S. (1997), *Substance: Its Nature and Existence* (New York: Routledge).

Horgan, Terence (1993), 'On What There Isn't', *Philosophy and Phenomenological Research* 53: 693-700.

Horgan, Terence and Matjaž Potrč (2000), 'Blobjectivism and Indirect Correspondence', *Facta Philosophica* 2: 249-270.

Hudson, Hud (2001), *A Materialist Metaphysics of the Human Person* (Ithica: Cornell University Press).

Iris, Madelyn A., Litowitz, Bonnie E., and Evens, Martha (1988), 'Problems of the Part-

Whole Relation', in Martha Evens (ed.), *Relational Models of the Lexicon* (Cambridge: Cambridge University Press), 261-88.

Jackson, Frank (1977), *Perception: A Representative Theory* (Cambridge: Cambridge University Press).

Johansson, I. (2004), 'On the Transitivity of the Parthood Relations', in Herbert Hochberg and Kevin Mulligan (eds.), *Relations and Predicates* (Frankfurt: Ontos Verlag), 161–181.

Johnston, Mark (2002), 'Parts and Principles: False Axioms in Mereology', *Philosophical Topics* 30: 129-166.

Johnston, Mark (2005), 'Constitution', in Frank Jackson and Michael Smith (eds.), *The Oxford Handbook of Contemporary Philosophy* (Oxford: OUP), 636-77.

Kaplan, David (1973), 'Bob and Carol and Ted and Alice', in Hintikka, Moravcsik, and Suppes (eds.), *Approaches to Natural Language* (Dordrecht: D. Reidel), 490-518.

Keefe, Rosanna and Smith, Peter (1997), 'Introduction' in Keefe and Smith (eds.) *Vagueness: A Reader* (Cambridge: MIT Press), 1-57.

Korman, Daniel Z. (2006), 'What Externalists Should Say About Dry Earth' *The Journal of Philosophy* 103: 503-20.

Kripke, Saul (1980), *Naming and Necessity* (Cambridge: Harvard).

Lewis, David (1974), 'Radical Interpretation', *Synthese* 23: 331-44.

Lewis, David (1983), 'New Work for a Theory of Universals', in Stephen Laurence and Cynthia Macdonald (eds.), *Contemporary Readings in the Foundations of Metaphysics* (Malden: Blackwell), 163-97.

Lewis, David (1984), 'Putnam's Paradox', *Australasian Journal of Philosophy* 62: 221-

236.

Lewis, David (1986), *On the Plurality of Worlds* (Malden: Blackwell).

Lewis, David (1991), *Parts of Classes* (Cambridge: Blackwell).

Lewis, David (2000), 'Causation as Influence', *The Journal of Philosophy* 97: 182-197.

López de Sa, Dan (2006), 'Is "Everything" Precise?', *Dialectica* 60: 397-409.

Lowe, E. J. (2001), 'Identity, Composition, and the Simplicity of the Self', in K. J. Corcoran (ed.), *Soul, Body, and Survival* (Ithica: Cornell University Press), 139-58.

Lowe, E. J. (2003), 'In Defense of Moderate-Sized Specimens of Dry Goods', *Philosophy and Phenomenological Research* 67: 704-10.

Lyons, John (1977), *Semantics* (London: Cambridge University Press).

Markosian, Ned (1998), 'Brutal Composition', *Philosophical Studies* 92: 211-249.

Markosian, Ned (2003), 'A Defense of Presentism', in Aleksandar Jokic and Quentin Smith (eds.), *Time, Tense, and Reference* (New York: Oxford), 47-82.

Markosian, Ned (forthcoming), 'Restricted Composition', in John Hawthorne, Theodore Sider, and Dean Zimmerman (eds.), *Contemporary Debates in Metaphysics* (Basil Blackwell).

McDaniel, Kris (2004), 'Modal Realism With Overlap', *Australasian Journal of Philosophy* 82: 137-52.

McGinn, Colin (1989), *Mental Content* (Oxford: Basil Blackwell).

Menzel, Christopher (2007), 'Actualism', *The Stanford Encyclopedia of Philosophy (Spring 2007 Edition)*, Edward N. Zalta (ed.), <http://plato.stanford.edu/archives/spr2007/entries/actualism/>.

Merricks, Trenton (2000), ‘‘No Statues’’, *Australasian Journal of Philosophy* 78: 47-52.

Merricks, Trenton (2001), *Objects and Persons*, (New York: Oxford).

Merricks, Trenton (2003a), ‘The End of Counterpart Theory’, *The Journal of Philosophy* 100: 521-549.

Merricks, Trenton (2003b), ‘Replies’, *Philosophy and Phenomenological Research* 67: 727-744.

Merricks, Trenton (2005), ‘Composition and Vagueness’, *Mind* 114: 615-637.

Moltmann, Friederike (1997), *Parts and Wholes in Semantics* (Oxford: OUP).

Nolan, Daniel (2006) ‘Vagueness, Multiplicity, and Parts’, *Nous* 40: 716-37.

Nuccetelli, Susana (2003), *Knowing That One Knows What One Is Talking About*, in Susan Nuccetelli (ed.), *New Essays on Semantic Externalism and Self-knowledge* (Cambridge, MA: MIT Press), 169-184.

Olson, Eric T. (2001), ‘Material Coincidence and the Indiscernibility Problem’, *The Philosophical Quarterly* 51: 337-355.

Peacocke, Christopher (2004), *The Realm of Reason* (Oxford: Oxford University Press).

Plantinga, Alvin (1974), *The Nature of Necessity* (Oxford: OUP).

Putnam, Hilary (1975), ‘The Meaning of ‘Meaning’’ in *Mind, Language and Reality*, (Cambridge: Cambridge University Press), 215-271.

Putnam, Hilary (1981), *Reason, Truth and History* (New York: Cambridge University Press).

Putnam, Hilary (1987), ‘Truth and Convention: On Davidson’s Refutation of Conceptual Relativism’, *Dialectica* 41: 69-77.

Quine, W.V.O. (1960), *Word and Object* (Cambridge: MIT Press).

Quine, W.V.O. (1981), *Theories and Things* (Cambridge: Harvard University Press).

Quinn, Philip L. (1997), 'Tiny Selves: Chisholm on the Simplicity of the Soul', in L. E. Hahn (ed.), *The Philosophy of R. M. Chisholm* (Open Court), 55-67.

Rea, Michael C. (1997a), *Material Constitution* (Lanham: Rowman and Littlefield).

Rea, Michael C. (1997b), 'Supervenience and Co-Location', *American Philosophical Quarterly* 34: 367-75.

Rea, Michael C. (1998), 'In Defense of Mereological Universalism', *Philosophy and Phenomenological Research* 58: 347-360.

Rea, Michael C. (2000), 'Constitution and Kind Membership', *Philosophical Studies* 97: 169-93.

Rea, Michael C. (2002), *World Without Design*, (New York: Oxford).

Rosen, Gideon and Dorr, Cian (2002), 'Composition as Fiction', in Richard M. Gale (ed.), *The Blackwell Guide to Metaphysics*, (Oxford: Blackwell), 151-174.

Rosen, Gideon and Smith, Nicholas J. J. (2004), 'Worldly Indeterminacy: A Rough Guide', *Australasian Journal of Philosophy* 82: 185-198.

Russell, Bertrand (1925/1958), 'Mind and Matter', in his *Portraits from Memory* (London: George Allen and Unwin), 140-60.

Sainsbury, Mark (1994) 'Why the World Cannot be Vague', *Southern Journal of Philosophy* 33: 63-82.

Salmon, Nathan (1981), *Reference and Essence* (Princeton: Princeton University Press).

Salmon, Nathan (1987), 'Existence', *Philosophical Perspectives* 1: 49-108.

Sawyer, Sarah (1998), 'Privileged Access to the World', *Australasian Journal of Philosophy* 76: 523-33.

Schaffer, Jonathan (2000), 'Trumping Preemption', *The Journal of Philosophy* 97: 165-81.

Sharvy, Richard (1983), 'Mixtures', *Philosophy and Phenomenological Research* 44: 227-39.

Shoemaker, Sydney (1988), 'On What There Are', *Philosophical Topics* 16: 201-223.

Sidelle, Alan (1989), *Necessity, Essence, and Individuation: a Defense of Conventionalism* (Ithica: Cornell University Press).

Sidelle, Alan (2002), 'Is There a True Metaphysics of Material Objects?', *Philosophical Issues, Realism and Relativism* 12: 118-145.

Sider, Theodore (1997) 'Four-Dimensionalism', *Philosophical Review* 106: 197-231.

Sider, Theodore (1999a), 'Global Supervenience and Identity Across Times and Worlds', *Philosophy and Phenomenological Research* 59: 913-37.

Sider, Theodore (1999b), 'Presentism and Ontological Commitment', *The Journal of Philosophy* 96: 325-47

Sider, Theodore (2001), *Four-Dimensionalism* (Oxford: Clarendon).

Sider, Theodore (2003), 'What's So Bad About Overdetermination', *Philosophy and Phenomenological Research* 67: 719-26.

Sider, Theodore (2004), 'Replies to Gallois, Hirsch and Markosian', *Philosophy and Phenomenological Research*, 58: 674-87.

Sider, Theodore (forthcoming), 'Ontological Realism', in David Chalmers, David Manley, and Ryan Wasserman (eds.), *Metametaphysics* (Oxford: Oxford University Press).

Simons, Peter (1987), *Parts: A Study in Ontology*, (New York: Oxford University Press).

Smith, Donald (2006), 'The Vagueness Argument for Mereological Universalism', *Pacific Philosophical Quarterly* 87: 357-368.

Sosa, Ernest (1987), 'Subjects Among Other Things', *Philosophical Perspectives*, 1: 155-187.

Sosa, Ernest (1993), 'Putnam's Pragmatic Realism', *The Journal of Philosophy* 90: 605-626.

Sosa, Ernest (1999), 'Existential Relativity', *Midwest Studies in Philosophy* 23: 132-143.

Stanley, Jason (2001), 'Hermeneutic Fictionalism', *Midwest Studies in Philosophy* 25: 36-71.

Stanley, Jason and Szabó, Zoltan (2000), 'On Quantifier Domain Restriction', *Mind and Language* 15: 219-261.

Thomasson, Amie (2003), 'Realism and Human Kinds', *Philosophy and Phenomenological Research* 57: 580-609.

Thomasson, Amie (forthcoming), *Ordinary Objects* (Oxford University Press).

Thomson, Judith Jarvis (1997), 'People and Their Bodies', in Jonathan Dancy (ed.), *Reading Parfit* (Oxford: Blackwell).

Tye, Michael (1990), 'Vague Objects', *Mind* 99: 535-557.

Tye, Michael (1992), 'Material Beings', *The Philosophical Review* 101: 881-84.

Unger, Peter (1979), 'There Are No Ordinary Things', *Synthese* 41: 117-154.

van Cleve, James (1999/1986), 'Mereological Essentialism, Mereological Conjunctivism, and Identity Through Time', in Steven D. Hales (ed.), *Metaphysics: Contemporary Readings*, (Belmont: Wadsworth Publishing Company), 482-494.

van Inwagen, Peter (1990), *Material Beings* (Ithica: Cornell).

Varzi, Achille C. (2002), 'Words and Objects', in Andrea Bottani, Massimiliano Carrara, and Daniele Giaretta (eds.), *Individuals, Essence, and Identity: Themes of Analytic Metaphysics*, (Dordrecht, Boston, and London: Kluwer Academic Publishers), 49-75.

Varzi, Achille C. (2003), 'Perdurantism, Universalism, and Quantifiers', *Australasian Journal of Philosophy* 81: 208-215.

Varzi, Achille C. (2005), 'Change, Temporal Parts, and the Argument From Vagueness', *Dialectica* 59: 485-498.

Varzi, Achille C. (2006), 'A Note on the Transitivity of Parthood', *Applied Ontology* 1: 141-6.

Weatherson, Brian (2003), 'What Good are Counterexamples?', *Philosophical Studies* 115: 1-31.

Wiggins, David (1968), 'On Being in the Same Place at the Same Time', *The Philosophical Review* 77: 90-95.

Wiggins, David (1980), 'What Would Be a Substantial Theory of Truth?', in Zak van Straaten (ed.), *Philosophical Subjects: Essays Presented to P. F. Strawson* (Oxford: Clarendon Press), 189-221.

Wiggins, David (2001), *Sameness and Substance Renewed* (New York: Cambridge University Press).

Williamson, Timothy (1994), *Vagueness* (London: Routledge).

Williamson, Timothy (2002), 'Necessary Existents', in A. O'Hear (ed.), *Logic, Language, and Thought* (Cambridge: Cambridge University Press).

Winston, Morton E., Chaffin, Robert, and Herrmann, Douglas (1987), 'A Taxonomy of

Part-Whole Relations', *Cognitive Science* 11: 417-444.

Yablo, Stephen (1992), 'Mental Causation', *Philosophical Review* 101: 245-280.

Zimmerman, Dean W. (1995), 'Theories of Masses and Problems of Constitution', *The Philosophical Review* 104: 53-110.

Zimmerman, Dean W. (2003), 'Material People' in Michael Loux and Dean W. Zimmerman (eds.) *The Oxford Handbook of Metaphysics* (Oxford: Oxford University Press).

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