

[A version of this paper appears in *Facta Philosophica* 7 (2005), pp. 69-84.]

Against Ontological Fundamentalism

[Ned Markosian](#)

Western Washington University

1 Introduction

Suppose you are asked to be the substitute teacher for a high school physics class. Suppose part of your assignment is to explain to the students all about the subatomic structure of a typical macroscopic object, such as a wooden table. Here is a speech that you are likely to find yourself making at some point during your lesson.

This table appears to be a solid chunk of matter, with surfaces that are almost perfectly smooth. But in fact we know, as a result of the discoveries of 20th Century physics, that the table is really a bunch of subatomic particles separated by regions of unoccupied space that are enormous in comparison to those particles. In short, what looks like a table is, in reality, a swarming mass of tiny particles with lots of empty space in between them.

There are a lot of things you could be taken to mean by such a speech, many of them very sensible. But there is also something not so sensible that you could be taken to mean. And in fact, the not-so-sensible thing you could be taken to mean is a thesis that is very popular among ordinary people, scientists, and philosophers. It may even be the received view. But it is false. The aims of this paper are (i) to explain what that thesis is,

(ii) to consider and refute a popular line of reasoning for it, and (iii) to show that the thesis in question is false.

In Section 2 I will formulate and explain the relevant thesis – Ontological Fundamentalism – together with several related theses that are involved in the popular line of reasoning for it. In Section 3 I will spell out the popular line of reasoning for Ontological Fundamentalism, and show that no one should be convinced by it. Finally, in Section 4, I will consider the independent question of whether Ontological Fundamentalism is true, and I will argue that it is not.

2 Ontological Fundamentalism

In his *Opticks*, which was first published in 1704, Isaac Newton endorsed the idea that the smallest particles of matter somehow glom together to compose bigger objects, which themselves glom together to form still larger objects, and so on right up to the level of the objects that we perceive with our sensory organs.¹ Today, that idea is still widely endorsed by scientists and philosophers. As Jaegwon Kim has written,

The Cartesian model of a *bifurcated* world has been replaced by that of a *layered* world, a hierarchically stratified structure of “levels” or “orders” of entities and their characteristic properties. It is generally thought that there is a bottom level, one consisting of whatever microphysics is going to tell us are the most basic physical particles out of which all matter is composed (electrons, neutrons, quarks, or whatever).²

And as Jonathan Schaffer writes,

¹ Newton, *Opticks*, p. 394.

² Kim, “The Nonreductivist’s Troubles with Mental Causation,” p. 337. See also Oppenheim and Putnam, “The Unity of Science as a Working Hypothesis.”

Talk about “the fundamental level of reality” pervades contemporary metaphysics. The fundamentalist starts with (a) a hierarchical picture of nature as stratified into *levels*, adds (b) an assumption that there is a bottom level which is *fundamental*, and winds up with (c) an ontological attitude according to which the entities of the fundamental level are *primarily* real, while any remaining contingent entities are at best derivative, if real at all. Thus the *physicalist* claims that microphysical theory (or some future extension thereof) describes the fundamental level of reality on which all else supervenes; the *Humean* claims that all supervenes on the distribution of local, fundamental qualities in spacetime; the *epiphenomenalist* claims that all causal powers inhere at the fundamental level; and the *atomist* claims that there are no macroentities at all but only fundamental entities in various arrangements.³

Schaffer’s remarks make it clear that there are really three distinct components to the kind of fundamentalism that we are here concerned with. The first component can be formulated in this way.

The Hierarchy Thesis: The natural world is divided into a hierarchy of levels. The levels are ordered mainly by mereological relations, but also by supervenience, realization, and nomological relations.

Thus, for example, there are (in descending order) the levels of (i) gigantic macroscopic objects, such as stars and planets; (ii) large macroscopic objects like mountains and buildings; (iii) ordinary-sized macroscopic items, including rocks and humans; (iv) biggish microscopic objects such as molecules; (v) smaller microscopic objects like atoms; (vi) items that are still smaller, such as electrons and neutrons; (vii) and so on. Moreover, according to The Hierarchy Thesis, the objects on the lower levels of the hierarchy *compose* the objects on the higher levels; everything that happens on the higher levels *supervenes* on what is occurring on the lower levels; the instantiations of various properties and relations on the higher levels must be *realized by* instantiations

³ Schaffer, “Is There a Fundamental Level?” p. 498.

of properties and relations at the lower levels; and the laws of nature governing the higher levels are *reducible* to the laws governing the lower levels.

The Hierarchy Thesis gives us a world of levels, but it does not ensure a bottom level. That there is a bottom level, then, is a further component of the fundamentalist position, which we can formulate as follows.

Mereological Atomism: There is a bottom level in the hierarchy – the level of *mereological simples* (or *atoms*).⁴

Mereological simples (sometimes called “mereological atoms”) are objects without proper parts. The atoms of contemporary physics were originally thought to have no proper parts (which is why they were called “atoms”), and it is now commonly believed that quarks and leptons do not have proper parts, and so are genuine mereological simples. According to Mereological Atomism, then, at the bottom level of the hierarchy are the basic building blocks of all physical objects, which themselves do not have parts.

Finally, here is a thesis that, as the above passages from Kim and Schaffer indicate, is commonly thought to follow from the combination of The Hierarchy Thesis and Mereological Atomism.

Ontological Fundamentalism: Only the mereological simples of the bottom level of the hierarchy are maximally real; any putative entities from other levels are either not real at all or else less real than the simples.

⁴ In “Is There a Fundamental Level?” Jonathan Schaffer argues convincingly that, contrary to popular opinion among philosophers and scientists, the empirical evidence does not support Mereological Atomism. My own view, as will become clear below, is that even if the empirical evidence does not support Mereological Atomism, there is nevertheless good *a priori* evidence for the thesis.

According to Ontological Fundamentalism, ours is fundamentally a world of mereological simples, which are in some sense more real than the entities that are composed of them. Thus, it may be true that there are such items as bricks and bicycles (not to mention salamanders and stars), but all of these macroscopic objects are less real than the mereological simples of which they are composed.

The Hierarchy Thesis is tremendously plausible, especially if we consider just the claim that the natural world is divided into a hierarchy of levels that are ordered by mereological relations. For to say that much is really just to say that composite objects are composed of smaller parts, and no one would want to deny that.⁵ Moreover, our current scientific theories give us overwhelmingly strong evidence that this is in fact the case.

The related claims of The Hierarchy Thesis (about the different levels of the world being ordered by supervenience, realization, and nomological relations) are perhaps less obviously true, although I suspect that this is merely because those other notions are more arcane than the notion of the part-whole relation. But once one understands, for example, what supervenience is, it is difficult not to believe that the distribution of properties among objects on one level of the hierarchy supervenes on the distribution of properties among the objects on any lower level. Similar remarks apply to the relevant realization and nomological relations.

Matters are not so clear-cut in the case of Mereological Atomism, however. Various philosophers have taken seriously the possibility of “atomless gunk” –

⁵ Or at least, no one would want to deny this claim as it applies to most typical cases. Some philosophers who believe in the possibility of co-located objects may want to allow that two co-located objects could have a fusion, which would not be any bigger than the two objects that compose it. But still, everyone will agree that in most typical cases, composite objects are composed of smaller parts.

composite objects whose parts all have proper parts.⁶ This suggests that it is not just a *priori* obvious to everyone that there must be a bottom level in the hierarchy.

Still, I think it is fair to say that most people find Mereological Atomism to be fairly plausible. And I personally think the intuitions most people have about this matter are right on target. For I happen to endorse a certain view about (i) which objects are simples and (ii) which regions of space are occupied by simples; and as it turns out this view entails the impossibility of atomless gunk. Allow me to explain.

Here is the view about simples that I endorse.

x is a *maximally continuous object* =df *x* is a spatially continuous object and there is no continuous region of space, *R*, such that (i) the region occupied by *x* is a proper subset of *R*, and (ii) every point in *R* falls within some object or other.

R is a *maximally continuous, occupied region* =df (i) *R* is a continuous region of space, (ii) every point in *R* is occupied, and (iii) it's not the case that there is a region, *R**, such that *R* is a proper part of *R**, *R** is continuous, and every point in *R** is occupied.

MaxCon+: Necessarily, (i) *x* is a simple iff *x* is a *maximally continuous object*, and (ii) every *maximally continuous, occupied region* is occupied by a simple.⁷

And here is why MaxCon+ entails that Mereological Atomism must be true. To begin with, notice that for every point in space, *p*, if *p* is occupied, then there is a region of space, *R*, such that *p* is in *R* and *R* is a *maximally continuous, occupied region*. In other words, to every occupied point in space there corresponds a largest region containing

⁶ See, for example, Schaffer, "Is There a Fundamental Level?"; Sider, "Van Inwagen and the Possibility of Gunk;" Lewis, *Parts of Classes* (esp. p. 20); and Leibniz, "Primary Truths," p. 33. It is likely that Anaxagoras also rejected Mereological Atomism – see the chapter on him in Barnes, *Early Greek Philosophy*.

⁷ The question *What are the necessary and sufficient conditions for an object's being a simple?* is discussed in Markosian, "Simples." The first part of MaxCon+ is defended in that paper, and the second part of MaxCon+ is added to my official view of simples in "Simples, Stuff, and Simple People."

that point that is both continuous and fully occupied. (In the case of an isolated point, the relevant region will be identical to that point.) But given the second tenet of MaxCon+, this means that every point in space that is occupied must be occupied by a simple. Which rules out the possibility of atomless gunk.⁸

In any case, as I mentioned above, I think that Mereological Atomism has a great deal of intuitive appeal that is independent of any particular view of simples. So let us assume for the sake of argument that it is true. Likewise, let us assume for the sake of argument that The Hierarchy Thesis is true. I will argue that even if we grant the Ontological Fundamentalist the truth of both Mereological Atomism and The Hierarchy Thesis, we will still not have any good reason to believe Ontological Fundamentalism. For as we will see in the next section, the conjunction of The Hierarchy Thesis and Mereological Atomism, despite appearances to the contrary, does not entail Ontological Fundamentalism.

3 A Popular Argument for Ontological Fundamentalism

We are assuming for the sake of argument that The Hierarchy Thesis and Mereological Atomism are both true. Here is a very natural line of reasoning from these two assumptions to the conclusion that Ontological Fundamentalism must be true, too. First, it is plausible to think that when some xs compose an object, that object depends for its existence on those xs, but the xs do not depend for their existence on the object that they compose. For example, consider a house that is composed of bricks. It is easy to

⁸ For a similar argument see Hudson, *A Materialistic Metaphysics of the Human Person*, Chapter 3, Section 5. Hudson also argues in the same section from The Pointy View of Simples (which is the main rival to MaxCon+) to the conclusion that there cannot be atomless gunk.

imagine the bricks coming to be widely scattered, so that the house no longer exists but the bricks themselves continue to exist. Or consider an atom that is composed of particles: the atom cannot exist without those particles, but the particles can exist without composing the atom. Consideration of examples such as these makes the following a very natural thesis.

The Dependence of Wholes on Parts (DoWoP): $(x)(ys)(\text{if } x \text{ is composed of the } ys, \text{ then it is possible for the } ys \text{ to exist without } x, \text{ but it is not possible for } x \text{ to exist without the } ys).$

Moreover, it is natural to think that DoWoP entails the following thesis.

The Ontological Superiority of Parts Over Wholes (OSPOW): $(x)(ys)(\text{if } x \text{ is composed of the } ys, \text{ then the } ys \text{ are more real than } x).$

After all, a whole is ontologically dependent on its parts, according to DoWoP. And there is a long tradition in philosophy that involves saying that whenever x depends for its existence on y , then y exists more fully, and is more real, than x .⁹ Thus, to continue with our house of bricks example, since the bricks could easily exist without composing the house, while the house is “ontologically dependent” on the bricks, it is natural to think that the bricks are more ontologically fundamental, and hence more real, than the house.

Once we have assumed The Hierarchy Thesis and Mereological Atomism and also committed ourselves, via DoWoP, to OSPOW, we will end up with Ontological Fundamentalism. For the first two theses ensure that there is a hierarchy with a lowest level; DoWoP ensures that the objects at each level of the hierarchy can exist in the

⁹ Descartes, for example, seems to endorse such a principle in Meditation Three of his *Meditations on First Philosophy*.

absence of the objects from any higher levels; and it then follows from OSPOW that only the objects on the lowest level of the hierarchy are maximally real.

Should anyone accept this line of reasoning? I think it can be shown that the answer is No. But to see this, we must first embark on a short tangent concerning composition and the nature of composite objects.

Peter van Inwagen recently raised a very important question concerning composition in his book *Material Beings*. The question is, roughly, Under what circumstances do some objects compose a further object? That is, for any *x*s, what are the necessary and jointly sufficient conditions for there being a *y* composed of those *x*s? Van Inwagen calls this question “The Special Composition Question”, and he discusses in his book a number of different possible answers to it. The answers fall into two main categories: “extreme” and “moderate” answers to The Special Composition Question.

There are two extreme answers. One is Universalism, according to which any plurality of objects whatsoever is automatically such that its members compose a further object.¹⁰ On this view, there is an object composed of you, me, and The Eiffel Tower; and similarly for any other collection of objects. The second extreme answer to The Special Composition Question is Nihilism, according to which it is never the case that

¹⁰ See Lewis, *On the Plurality of Worlds*, esp. pp. 211-213; van Inwagen, *Material Beings*, Section 8; and Sider, *Four-Dimensionalism*, esp. pp. 120-139.

The statement of Universalism in the text is in need of qualification. According to the way ‘the *x*s compose *y*’ is defined in van Inwagen’s book and elsewhere, to say that the *x*s compose *y* is to say that (i) the *x*s are all parts of *y*, (ii) no two of the *x*s overlap, and (iii) every part of *y* overlaps at least one of the *x*s. So, taking into account the second condition of the definition, Universalism is really the view that any non-overlapping objects whatsoever compose a further object. In what follows I will let this qualification be implicit.

two or more objects compose a further object.¹¹ On this view the only objects that exist are mereological simples.

What characterizes the moderate answers to The Special Composition Question is that they all agree that neither Universalism nor Nihilism is true. That is, they agree that there are possible cases in which some xs compose a further object, and also possible cases in which some xs fail to compose any additional object. For example, one moderate answer is Fastenation, according to which some xs compose a further object iff they are fastened together.¹² And another moderate answer is the theory proposed by van Inwagen, according to which for any xs, there is an object composed of those xs iff the activities of the xs constitutes a life.¹³

Much has been written in recent years on these and other responses to van Inwagen's Special Composition Question.¹⁴ I do not have the space here to enter into that debate. But I want to suggest that, no matter how one chooses to respond to The Special Composition Question, one will have an excellent reason to reject DoWoP. Consider, first, the Nihilist. According to Nihilism there is only one kind of case in which there is ever an x composed of some ys, namely, the case in which there is only one of the ys, which is identical to x. But in that case it will be false that the ys could exist without x. (And also, by the way, false that the ys are more real than x.) So the Nihilist, for one, cannot accept DoWoP.

¹¹ See van Inwagen, *Material Beings*, Section 8.

¹² See van Inwagen's discussion of the view he calls "Fastening" in *Material Beings*. See also the discussions of Fastenation in Markosian, "Brutal Composition" and Markosian, "Restricted Composition."

¹³ See van Inwagen, *Material Beings*, esp. Section 9.

¹⁴ For an overview, see Markosian, "Restricted Composition."

Next consider the Universalist (who answers the Special Composition Question by saying that it is always the case, given some *ys*, that there is an *x* composed of those *ys*). And consider again our brick house. The Universalist says that the bricks compose something – namely, the fusion of the bricks – whether they are arranged housewise or not. In other words, the Universalist says that it is not possible for the bricks to exist without their fusion also existing. But this means that the bricks and their fusion are a counterexample to DoWoP. (As is every plurality of objects and its fusion, according to Universalism.)

It might be objected at this point that some Universalists will want to say that the fusion of the bricks, on the one hand, and the house itself, on the other hand, are two distinct things (which share a temporal part), and that such philosophers will likely say that the bricks could in fact exist without the house's existing, so that the bricks and the house do not constitute a counterexample to DoWoP. But this objection is off the mark, for the fact (if it is a fact) that the fusion of the bricks and the house are two distinct things does not change the fact that, according to Universalism, the fusion of the bricks exists iff the bricks themselves exist. This last point ensures that the bricks and their fusion (as opposed to the bricks and the house) will constitute a counterexample to DoWoP.

What about someone who endorses a moderate answer to The Special Composition Question? Should she at least endorse DoWoP? I don't think so. Take the brick house again. I think it is clear upon reflection that, given the truth of some moderate answer to The Special Composition Question (such as Fastenation), it's true that the bricks could exist without the house, but it's also true that the house could exist

without the bricks. After all, we could perform a little “Theseus” operation on the house, gradually replacing its parts one by one, and destroying the original bricks once we remove them from the house, until the house still exists but none of the original bricks does. So even according to someone who gives a moderate answer to The Special Composition Question, the house and the bricks are a counterexample to DoWoP. Notice that similar remarks apply to van Inwagen’s own answer to The Special Composition Question. For a human being can continue to exist without all of her current parts. In fact, I think it is safe to say that any proponent of a moderate answer to The Special Composition Question who is not a mereological essentialist – i.e., who does not hold the view that each object has each of its parts essentially – will want to say that counterexamples to DoWoP are nearly as common as composite objects.¹⁵

Since neither the Nihilist nor the Universalist nor the proponent of any moderate answer to The Special Composition Question should accept DoWoP, and since DoWoP is essential to the line of reasoning from The Hierarchy Thesis and Mereological Atomism to Ontological Fundamentalism, it follows that no one should accept that line of reasoning.

4 Is Ontological Fundamentalism True?

We have seen that what looks like a plausible line of reasoning leading to Ontological Fundamentalism is hopelessly flawed. But we can still ask whether the view itself is true. In answering this question it behooves us first to distinguish Ontological

¹⁵ And it goes without saying (or would have if I weren’t saying it) that very few current philosophers who endorse moderate answers to The Special Composition Question are mereological essentialists.

Fundamentalism from another thesis with which it might be confused, namely, the following.

The Epistemological Version of Ontological Fundamentalism (EVOF): We should assign a higher degree of subjective probability to the claim that the fundamental entities exist than we should to the claim that any of the other entities exist.

EVOF presupposes The Hierarchy Thesis and Mereological Atomism, but doesn't go as far as Ontological Fundamentalism. For EVOF does not say that only the fundamental entities are maximally real. Instead EVOF, as its name suggests, makes a much weaker, epistemological claim about the non-fundamental entities, namely, that we should give less credence to their existence than we do to the existence of the fundamental entities themselves.

EVOF would presumably be motivated by a desire to take seriously the claims of our best scientific theories, and to pay the proper respect to the most fundamental entities of those theories. These are reasonable things to do, but EVOF is a misguided attempt to do them. If we want to take our best scientific theories seriously, we should endorse their claims about the existence of subatomic particles. If we want to pay the proper respect to the fundamental entities of those theories, we should believe in them. But we don't have to go so far as to assign a higher degree of subjective probability to the existence of the fundamental entities than we do to the existence of any other entities. For one thing, it's already a sign of great respect to assign the *same* degree of subjective probability to the existence of the subatomic particles that we do to the existence of ordinary, macroscopic objects.¹⁶ And for another thing, there is something

¹⁶ If you doubt this, see Van Fraassen, *The Scientific Image*.

paradoxical about assigning a higher degree of subjective probability to the subatomic particles, when the entire reason for positing their existence in the first place is to explain phenomena on the macro level. Given this, the less confident we are that the macro objects exist, the less confident we should be about the existence of the theoretical entities that are invoked to explain them.

So EVOF turns out to be a wholly unmotivated epistemological thesis. What's more, it has no place in a discussion of whether a purely metaphysical theory (such as Ontological Fundamentalism) is true. Let us then focus on the question of whether Ontological Fundamentalism itself is true. Here is the view again.

Ontological Fundamentalism: Only the mereological simples of the bottom level of the hierarchy are maximally real; any putative entities from other levels are either not real at all or else less real than the simples.

There are in fact at least eight excellent reasons to reject Ontological Fundamentalism. The first has to do with its connection to Mereological Atomism, which is explicitly presupposed by Ontological Fundamentalism. (For our statement of Ontological Fundamentalism talks of “the bottom level of the hierarchy.”) I mentioned above that there is at least one reason, having to do with a particular view of simples that I happen to endorse, for accepting Mereological Atomism. But if I am wrong about either (a) the nature of simples or (b) the argument from MaxCon+ to Mereological Atomism, then it could well turn out that every object in the universe has proper parts.¹⁷ Those who are skeptical about either MaxCon+ or the argument in question, then, should also be skeptical about Ontological Fundamentalism.

¹⁷ On this possibility see Schaffer, “Is There a Fundamental Level?”

It might be thought that Ontological Fundamentalism could be modified so as to make it compatible with the possibility that there are no simples, by removing its explicit reference to a bottom level and leaving just the claim that the entities at any given level are less real than the entities at any lower level. A proponent of this modified version of Ontological Fundamentalism would hold that nothing is maximally real, although the entities at each level are more real than those at the higher levels. But this would create a number of difficulties for the would-be Ontological Fundamentalist. One is just that it seems highly implausible to say that nothing is maximally real. Another has to do with the ever-increasing degrees of reality we will find as we move downward through the infinite number of levels. Since each level is supposed to be more real than any higher level, and since there are an infinite number of levels in the downward direction, there will be some pressure to say, bizarrely, that there is no upper bound when it comes to degrees of reality. This undesirable result might be resisted if we say that below a certain level, there are smaller and smaller increases as we continue to move down. For example, it might be that the level below that of macroscopic objects is one-and-a-half times as real as the level of macroscopic objects, the level below that is one-and-three-quarters times as real as the level of macroscopic objects, and so on, so that the series converges on a degree of reality that is twice as real as the level of macroscopic objects. But it is hard to see what would motivate such a claim, apart from a desire to salvage some semblance Ontological Fundamentalism.

The second reason for rejecting Ontological Fundamentalism concerns an unwanted consequence of positing different degrees of existence. The unwanted consequence is that we will require a potentially enormous number of different

existential quantifiers – one to say that there is to degree .4 an x such that ϕx , another to say that there is to degree .5 an x such that ϕx , another to say that there is to degree .6 an x such that ϕx , and so on. What's more, given the customary interdefinability of the universal and existential quantifiers, this means that we will also need to have a potentially enormous number of corresponding universal quantifiers. Ordinary English sentences, such as 'There is a glass on the table', will turn out to be at best shorthand for sentences like 'There is to some degree or other a glass on the table' and, more likely, wildly ambiguous among a large number of different possible meanings (each one corresponding to one of the relevant degrees of reality).

Here is a third reason for rejecting Ontological Fundamentalism. Consider a typical macroscopic object, such as a table that has, among its parts, four legs. Now, it is a consequence of Ontological Fundamentalism that the table itself is literally less real than its legs. But this is surely very implausible. For we all think of the legs of a table as no more real than the table itself. In general, we think of all "medium-sized specimens of dry goods" as equally real.

A fourth reason for rejecting Ontological Fundamentalism is that it seems to be based on a grave misunderstanding of the notion of composition. When we say of some x s that there is a y composed of those x s, we are not merely saying that it is *as if* there is a further object composed of the x s. Instead, we are saying that there literally *is* a further object composed of the x s. Ontological Fundamentalism seems to get this wrong.

The fifth reason for rejecting Ontological Fundamentalism is related to the fourth reason. It is that if we think the x s are real, and we think that there is a y composed of

the x s, then we should think that y is equally real. In other words, we should think that the object composed of the x s inherits from the x s the same degree of reality that they possess.

The sixth reason for rejecting Ontological Fundamentalism is a slightly unusual one, insofar as it is of a personal nature. In general, it is best not to take philosophical theses and arguments personally, but I think that each one of us does have a personal reason to deny Ontological Fundamentalism: the view entails that we ourselves are not maximally real. And surely there is something paradoxical (not to mention self-defeating) about a philosopher's insisting that he or she is not maximally real.

Here is a seventh reason to reject Ontological Fundamentalism. Suppose that there is a bottom level of the hierarchy, as Mereological Atomism says there is, but no top level. That is, suppose that for each level of the hierarchy, L , consisting of objects that are composed of entities from lower levels ($L-1$, $L-2$, etc.), there is a higher level, $L+1$, consisting of entities composed of objects from L . On this supposition there will be an infinite number of levels above ours, so let us call the relevant thesis "The No Limits Hypothesis" (or NLH). NLH of course cannot be true if the universe is spatially finite, but surely it is a metaphysical possibility that the universe be spatially infinite. More to the point, it seems quite clear that NLH itself is metaphysically possible. But (and here is the rub) Ontological Fundamentalism entails that if NLH were true, then there would be an infinite series of levels, each of which is less real than the previous one. And that is surely absurd.

The final reason for rejecting Ontological Fundamentalism that I want to mention here concerns the very idea of different degrees of reality. Intuitively, existence is not

the kind of thing that comes in degrees. It is, instead, an all or nothing affair, with no middle ground between existence and non-existence. As David Lewis says, concerning the idea of an object that exists to some degree between 0 and 1,

What is this thing such that it sort of is so, and sort of isn't, that there is any such thing?¹⁸

Lewis's question suggests that the idea of indeterminate existence is downright unintelligible. I tend to agree with this. But I also want to say that, insofar as the idea of indeterminate existence is intelligible, it is not merely false but also just plain crazy.

It is worth noting that I am not here saying that the claim of the Nihilist – that there are no composite objects at all – is crazy. In fact, I find the claim of the Nihilist to be very reasonable, compared to Ontological Fundamentalism. For the Nihilist, like most of us, doesn't believe in degrees of existence. He just believes in the existence of far fewer things than most of us believe in.

Speaking of Nihilism, here is a variation on Ontological Fundamentalism that entails Ontological Fundamentalism but is not entailed by it.

Nihilistic Ontological Fundamentalism: Only the mereological simples of the bottom level of the hierarchy are real; there is no such thing as an object composed of two or more mereological simples.

Nihilistic Ontological Fundamentalism is not open to any of the above objections to EVOF and Ontological Fundamentalism. And in fact I think Nihilistic Ontological Fundamentalism should be considered to be right near the head of the class when it comes to answers to The Special Composition Question. For Nihilistic Ontological

¹⁸ Lewis, *On the Plurality of Worlds*, pp. 212-213.

Fundamentalism is the same thing as old-fashioned Nihilism, which I take to be a perfectly respectable answer to The Special Composition Question.

If I am right that Nihilistic Ontological Fundamentalism is a respectable view while Ontological Fundamentalism itself is not, this is a little bit surprising in at least one way. For it follows that what can be thought of as the most extreme version of Ontological Fundamentalism (namely, Nihilistic Ontological Fundamentalism) is actually a more reasonable view than what might be taken to be more middle-of-the-road versions of the theory (namely, those that assign different degrees of reality to the objects on the various levels of the hierarchy). When it comes to Ontological Fundamentalism, at least, it turns out to be more reasonable to be radical than to stand in the middle of the road.¹⁹

¹⁹ This paper grew out of comments on a paper by Jonathan Schaffer (called “Evidence for Fundamentality?”) that were presented at the Bellingham Summer Philosophy Conference in August, 2000. I am grateful to Schaffer for inspiring this project, and also for bibliographic assistance. I am also grateful to Hud Hudson for helpful comments on an earlier draft.

Works Cited

Barnes, Jonathan (ed. and trans.), *Early Greek Philosophy*, 2nd revised edition (London: Penguin Books, 2001).

Descartes, René, *Meditations on First Philosophy* (trans. by John Cottingham) (Cambridge: Cambridge University Press, 1986).

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

Kim, Jaegwon, "The Nonreductivist's Troubles with Mental Causation," in Kim, Jaegwon, *Supervenience and Mind: Selected Philosophical Essays* (Cambridge: Cambridge University Press, 1993), pp. 336-357.

Leibniz, G.W., "Primary Truths," in Leibniz, G.W., *Philosophical Essays* (trans. by Roger Ariew and Daniel Garber) (Indianapolis: Hackett Publishing Company, 1989).

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

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

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

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

Markosian, Ned, "Simples," *Australasian Journal of Philosophy* **76** (1998), pp. 213-226.

Newton, Isaac, *Opticks: Or a Treatise on the Reflections, Refractions, Inflections, and Colours of Light* (New York: Dover Press, 1952).

Oppenheim, Paul, and Putnam, Hilary, "The Unity of Science as a Working Hypothesis," in Feigl, Herbert, Scriven, Michael, and Maxwell, Grover, *Minnesota Studies in the Philosophy of Science, Volume II* (Minneapolis: University of Minnesota Press, 1958); reprinted in Boyd, Richard, Gasper, Philip, and Trout, J.D. (eds.), *The Philosophy of Science* (Cambridge, MA: MIT Press, 1991).

Schaffer, Jonathan, "Is There a Fundamental Level?" *Noûs* **37** (2003), pp. 498-517.

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

Sider, Theodore, "Van Inwagen and the Possibility of Gunk," *Analysis* **53** (1993), pp. 285-289.

Van Fraassen, Bas C., *The Scientific Image* (Oxford: Oxford University Press, 1980).

Van Inwagen, Peter, *Material Beings* (Ithaca: Cornell University Press, 1990).