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BRUTAL COMPOSITION

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1 Introduction

According to standard, pre-philosophical intuitions, there are many composite objects in the physical universe. There is, for example, my bicycle, which is composed of various parts - wheels, handlebars, molecules, atoms, etc. Recently, a growing body of philosophical literature has concerned itself with questions about the nature of composition.[1] The main question that has been raised about composition is, roughly, this: Under what circumstances do some things compose, or add up to, or form, a single object? It turns out that it is surprisingly difficult to give a satisfactory answer to this question that accords with standard, pre-philosophical intuitions about the universe's composite objects. In fact, the three rival views in response to this question that have received the most support in the literature are (i) that there are no objects composed of two or more parts (which means that there are no stars, chairs, humans, or bicycles);[2] (ii) that the only objects composed of two or more parts are living organisms (which still means no stars,

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[1] The main pioneer in the field has been Peter van Inwagen. See his *Material Beings*, "Precis of *Material Beings*," and "Reply to Reviewers." Van Inwagen credits H. Scott Hestevolt with being the first present-day philosopher to raise SCQ (see below), in Hestevolt, "Conjoining." See also Lewis, *On the Plurality of Worlds* and *Parts of Classes*; Hirsch, "Peter van Inwagen's *Material Beings*;" Horgan, "On What There Isn't;" Rosenberg, "Comments on Peter van Inwagen's *Material Beings*;" Persson, "Critical Study of van Inwagen's *Material Beings*;" and Sider, "Van Inwagen and the Possibility of Gunk."

[2] For arguments that support this view see Unger, "There Are No Ordinary Things;" Unger, "Skepticism and Nihilism;" and Horgan, "On What There Isn't."

chairs, or bicycles);[3] and (iii) that any objects whatsoever, no matter how disparate, far apart, or otherwise unrelated, compose a single object (which means that there are stars, chairs, humans, and bicycles, but also countless other bizarre objects that standard, pre-philosophical intuitions would never countenance).[4] No one has yet defended a view in response to the above question about composition that is consistent with standard, pre-philosophical intuitions about the universe's composite objects. The aim of this paper is to spell out and defend such a view.

2 The Special Composition Question

I said above that the main question in recent philosophical discussions of composition is roughly this: Under what circumstances do some things compose, or add up to, or form, a single object?[5] We can ask this question in a more precise way if we adopt the following technical terms:

> *x overlaps y* =df there is a *z* such that *z* is a part of *x* and *z* is a part of *y*.[6]
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> The *x*s *compose y* =df (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.[7]

Here then is the official formulation of the question that I will be addressing in this paper (I follow Peter van Inwagen in calling this "the Special Composition Question"):

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[3] This view is defended by van Inwagen in *Material Beings*.

[4] This is a rough way of stating a view that is defended by various people. See, for example, Lewis, *On the Plurality of Worlds*, pp. 211-13, and *Parts of Classes*, pp. 72-87; and Jubien, *Ontology, Modality, and the Fallacy of Reference*, pp. 14-17.

[5] Although there are interesting questions about non-physical composite objects, I will, following van Inwagen, not be concerned with any such questions here. That is, I will be concerned here only with questions about physical, composite objects. For a discussion of the difference between physical and non-physical objects, see Markosian, "What Are Physical Objects?"

[6] *Cf*. van Inwagen's definition on p. 29 of *Material Beings* and Lewis's definition on p. 73 of *Parts of Classes*.

[7] *Cf*. van Inwagen's definition on pp. 28-29 of *Material Beings*. For an explanation of plural quantification, see Section 2 of *Material Beings*.

> **The Special Composition Question (SCQ):** What necessary and jointly sufficient conditions must any *x*s satisfy in order for it to be the case that there is an object composed of those *x*s?[8]

Answers to SCQ will typically be instances of the following schema:

> (S1) Necessarily, for any *x*s, there is an object composed of the *x*s iff _____.

But a qualification is in order. What is wanted is a correct and *informative* answer to SCQ. For it is relatively easy to find an instance of (S1) that is true but nevertheless uninformative. Here is one such instance of (S1):

> (1) Necessarily, for any *x*s, there is an object composed of the *x*s iff there is a *y* such that the *x*s are all parts of *y* and no two of the *x*s overlap and every part of *y* overlaps at least one of the *x*s.

(1) is uninformative because 'there is an object composed of the *x*s' and 'there is a *y* such that the *x*s are all parts of *y* and no two of the *x*s overlap and every part of *y* overlaps at least one of the *x*s' are synonymous.

Let us agree to adopt the following definition.

> *A* is a *trivial answer to SCQ* =df (i) *A* is an instance of (S1), and (ii) the expression that appears after 'iff' in *A* is synonymous with 'there is an object composed of the *x*s'.

Then we can state the relevant qualification this way: What is wanted is a true and non-trivial answer to SCQ.[9]

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[8] My formulation of SCQ differs slightly from van Inwagen's, but amounts to the same thing. See van Inwagen, *Material Beings*, pp. 30-31.

In what follows I will overlook some important issues involving time. For one thing, I will examine SCQ, rather than the question 'Under what conditions is it true of some *x*s and some time, *t*, that the *x*s compose something at *t*?'. For another thing, I will not consider the question 'Under what conditions is it true of some *x*s, some *y*s, and two times, t_1 and t_2, that there is an object, *z*, such that *z* is composed of the *x*s at t_1 and *z* is composed of the *y*s at t_2?'.

[9] Van Inwagen lays down a similar, but more stringent, restriction on what can count as an interesting answer to SCQ. He in effect stipulates that answers to SCQ are to be instances of (S1) that contain no mereological terms after their occurrences of 'iff'. (See *Material Beings*, pp. 30-31.) Thus it is possible for a sentence to qualify as a non-trivial answer to SCQ on my account, but fail to qualify as an answer to SCQ at all on van Inwagen's account. The formulation of Universalism that appears below is such a sentence.

It is important not to confuse SCQ with a closely related but nevertheless distinct question about composition, namely, the question that van Inwagen calls "the General Composition Question." Van Inwagen characterizes the General Composition Question in the following way.

> As the Special Composition Question may be identified with the question, Under what conditions does composition occur? so the General Composition Question may be identified with the question, What *is* composition?[10]

Here is my official formulation of the General Composition Question:

> **The General Composition Question:** What is the correct analysis, in non-mereological terms, of the concept of composition?[11]

The General Composition Question is a request for a correct, analytic definition of 'the *x*s compose *y*' in which no mereological term (i.e., no term such as 'part', 'whole', or 'compose') appears in the definiens. That is, the General Composition Question is a request for a true instance of the schema,

(S2) The *x*s *compose y* =df _____,

in which no mereological term appears after '=df'. Thus, the definition of 'the *x*s compose *y*' given above will not count as an answer to the General Composition Question, even though it is an instance of (S2), because of the occurrences of the mereological terms 'part' and 'overlap' in that definition.

3 Brutal Composition

The view that I will be defending in this paper, which I will call "Brutal Composition," is, roughly, the view that there is no true and interesting answer to SCQ. Whenever composition occurs, on this view, it is just a "brute fact" that the relevant objects compose something, and

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[10] Van Inwagen, *Material Beings*, p. 39.

[11] My formulation of the General Composition Question is based on van Inwagen's discussion of the General Composition Question, although my formulation of the General Composition Question differs slightly from van Inwagen's. See van Inwagen, *Material Beings*, Section 4.

whenever composition fails to occur, this too is just a "brute fact." Here is a first formulation of Brutal Composition.

> **First Formulation of Brutal Composition:** There is no true, non-trivial, answer to SCQ.

But here a qualification is in order. It is possible that there is a true and non-trivial instance of (S1) that simply enumerates each individual case of composition, until no case of composition has been left out. Such a sentence would have to be long indeed. In fact, even if the number of cases of composition in our world is finite, it seems clear that any sentence that expressed a necessary truth about composition in such an enumerative fashion would have to be infinitely long. I do not consider such sentences genuine answers to SCQ. But just to be on the safe side I will make the following my official formulation of Brutal Composition.

> **Brutal Composition (BC):** There is no true, non-trivial, and finitely long answer to SCQ.

Now, I must admit right at the outset that there is something immediately counter-intuitive about BC. The difficulty, I think, is that SCQ itself is such a natural question to ask that one assumes that there must be an interesting answer to it. I will have more to say below about the counter-intuitiveness of BC, and the question of whether BC should be declared untenable in virtue of its counter-intuitiveness. But I also hope to show that, in spite of its initial counter-intuitiveness, BC is actually true.

Part of my strategy for defending BC will involve trying to show that BC is not really as implausible as it may at first seem. Another part of my strategy will involve giving an argument for BC. The argument I will give for BC is an "argument by elimination." According to the reasoning in this argument, BC can be seen to be true by default, since all of the other leading responses to SCQ are unacceptable. The third part of my strategy for defending BC will involve answering some objections to BC. And finally, the fourth part of my strategy for defending BC will involve pointing out some important advantages of accepting BC.

Some Theses Related to BC

In order to explain BC, and to show that it is not as counter-intuitive as it might at first seem, I would like to consider some related theses. The first of these is a thesis that I think that one who subscribes to BC (hereafter, "the BCer") ought to endorse. At the beginning of this section I gave a rough characterization of BC, which included the remark that according to BC, whenever composition occurs, it is just a "brute fact" that the relevant objects compose something. If we take the notion of one fact's obtaining in virtue of another fact's obtaining to be primitive, then the idea of a "brute fact" can be captured by the following definition.[12]

> F is a *brute fact* =df F is a fact, and it is not the case that F obtains in virtue of some other fact or facts.[13]

With this definition in hand, we can formulate as follows the thesis that matters of composition are brutal.

> **The Brutality of Compositional Facts (BCF):** For any *x*s, if there is an object composed of the *x*s, then it is a brute fact that there is an object composed of the *x*s.

I think that BCF is a thesis that the BCer ought to endorse. In fact, I think that BC and BCF mutually support each other. For it seems to me most likely that compositional facts are brutal, if there is no true, non-trivial, and finitely long answer to SCQ; and it also seems to me that there can be no such answer to SCQ, if compositional facts are indeed brutal. (I will have more to say below about the relation between BC and BCF.)

BCF is, however, to be contrasted with a related thesis about composition that I think the BCer need not - and probably should not - endorse. In order to formulate this other thesis, we

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[12] I wish I were in a position to give an analysis of the *in virtue of* relation, but I am not. I think it is fair to assume, however, that we have some rough idea of what that relation is. For the purposes of this paper, I will assume that there is such a relation, and I will take it to be unanalyzable.

[13] I define 'fact' as follows.

> F is a *fact* =df F is the instantiation of some universal by some object or objects.

will have to appeal to the notion of "global supervenience," which can be defined as follows. (Let '*U1*' and '*U2*' range over sets of universals.)

> *U1 supervenes globally on U2* =df it is not possible for two worlds to differ with respect to the distribution of universals in *U1* unless they also differ with respect to the distribution of universals in *U2*.

The thesis that I will call "the Non-supervenience of Composition" can then be formulated as follows.

> **The Non-supervenience of Composition:** The set {composition} does not supervene globally on any set of non-mereological universals.[14]

The Non-supervenience of Composition is a stronger thesis than either BC or BCF, and one that, it seems to me, the BCer does not have to endorse. For the BCer can plausibly say that if two worlds differ not at all with respect to non-mereological universals, then they must not differ with respect to composition either. That is, the BCer can plausibly say that even though there is no true, non-trivial, and finitely long answer to SCQ, and even though compositional facts are brute facts, it is nevertheless impossible for two worlds to be duplicates with respect to non-mereological universals but differ with respect to composition.

It is worth noting here that there are other plausible combinations of theses that are analogous to the combination of BC, BCF, and the denial of the Non-supervenience of Composition. For example, it is natural to think that the following theses about goodness could all be true: (i) there is no true, non-trivial, and finitely long sentence of the form "x is good iff _____," (ii) facts about goodness are all brute facts; and (iii) the set {goodness} supervenes globally on some set of non-axiological universals. Similarly, it is plausible to claim that the following theses about beauty are all true: (i) there is no true, non-trivial, and finitely long sentence of the form "x is beautiful iff _____"; (ii) facts about beauty are brute facts; and (iii) the set {beauty} supervenes globally on some set of non-aesthetic universals.

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[14] By 'composition' I mean the multigrade relation that is instantiated whenever some objects compose something.

Is BC as Implausible as it at First Appears?

I mentioned above that BC is somewhat counter-intuitive. The reason for this, I think, has to do with certain features of SCQ. Some philosophical questions are complicated, difficult to formulate, and difficult to grasp. Some philosophical questions concern matters that the average person simply does not care about, and that few people have any strong intuitions about. But SCQ is uncomplicated, easy to formulate, and easy to grasp. Moreover, the subject matter of SCQ is one that the average person is likely to care about, and one concerning which many people have strong intuitions. In addition, I think it is fair to say that there are, according to standard, pre-philosophical intuitions, many cases that seem to be clear cases of composition, as well as many cases that seem to be clear cases of non-composition. So it is only natural to ask what distinguishes the relevant cases, and to assume that there is some informative answer to that question.

Despite the fact that BC is, for these reasons, initially counter-intuitive, I think it can be shown that BC is in fact not as implausible as we may at first think. One important point in this regard concerns the General Composition Question. The General Composition Question, it will be recalled, is a request for an analysis, in non-mereological terms, of the concept of composition. Van Inwagen says the following about this question.

> I am inclined to think that there is no way of answering the General Composition Question. I am inclined to think that the concepts "part," "sum," and "compose" form what (by analogy to "the modal circle" or "the moral circle") one might call 'the mereological circle', a closed family of concepts.[15]

I agree with van Inwagen on this point, and think that all parties to the controversy over SCQ should do the same. That is, I think that all parties to the controversy ought to accept the following thesis.

> **The Doctrine of the Mereological Circle:** No mereological concept is capable of analysis in terms outside of the mereological circle.

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15 *Material Beings*, p. 51.

The best reason for accepting the Doctrine of the Mereological Circle, it seems to me, is that no non-mereological analysis of any mereological concept, including composition, seems to be forthcoming.[16] Further evidence may be found in the fact that no writer on mereology has ever proposed a non-mereological analysis of any mereological concept.[17]

Let us assume, then, that the Doctrine of the Mereological Circle is correct, which means that there is no good answer to the General Composition Question. This does not necessarily mean that there is no interesting answer to SCQ. For from the claim that the concepts in the mereological circle cannot be analyzed in terms outside of that circle it does not follow that there are no interesting connections among the concepts in the circle and concepts outside of the circle.

But consider this question: *Given that the concepts in the mereological circle cannot be analyzed in terms outside of the circle, are there any interesting and necessarily true principles linking the concept of composition to any non-mereological concepts?* This, it seems to me, is an open question. In particular, if it appears to be the case, after considerable efforts at discovering linking principles of the relevant kind have failed, that there simply are no such linking principles, then I think we will have good evidence that the answer to this question is *No; there are no interesting and necessarily true principles linking the concept of composition to any non-mereological concepts*. And I will argue below that this is in fact the case.

There is one final reason I would like to mention for thinking that BC and BCF are not as implausible as they may at first seem. It is clear that there must be some concepts that are "brutal," i.e., such that facts involving their instantiation do not obtain in virtue of any other facts; for to suppose otherwise is to commit oneself to either an infinite regress or else a vicious

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16 *Cf*. Section 4 of *Material Beings*.

17 At least, not as far as I know. See, for example, Lesniewski, "On the Foundations of Mathematics;" Goodman and Leonard, "The Calculus of Individuals and Its Uses;" Prior, *Formal Logic*, Section III.4; Tarski, *Logic, Semantics, Metamathematics*, pp. 24-29; Eberle, *Nominalistic Systems*; Simons, *Parts: A Study in Ontology*; and Lewis, *Parts of Classes*.

circle. And it seems to me that possessing the following characteristics makes a concept a likely candidate for being assigned the status of brutality in our theorizing: (i) being relatively easy to grasp on an intuitive level, (ii) being such that there seem to be clear-cut cases of both instantiation and non-instantiation, and (iii) being such that no acceptable account of what it is in virtue of which some *x*s instantiate that concept seems to be forthcoming. I take it that composition pretty clearly has the first two of these characteristics, and I suspect that many people would agree with me on this point.[18] And I will argue in the next section that composition also possesses the third characteristic. If I am right about these claims, then composition is indeed a likely candidate for brutality.

4 The Argument by Elimination

In this section I will present what I take to be the best argument for BC. But the argument will proceed in a somewhat roundabout way. For the argument employs the "process of elimination." That is, the argument consists of considering in turn the most plausible answers to SCQ, finding each of them untenable, and concluding that there is no good answer to SCQ. This means that we will have to spend some time considering what seem to be the most plausible answers to SCQ. In what follows I will discuss what I take to be the four best candidates among answers to SCQ. I will also consider a response to SCQ that involves saying that there *is* a correct answer to the question, and that that answer has a certain specifiable form, even though the relevant answer has not yet been discovered.

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[18] Nihilists and Universalists (see below) will not agree that there are clear-cut cases of both composition and non-composition, however, so Nihilists and Universalists will deny that composition has the second characteristic.

Are There No Objects with Proper Parts?

Perhaps we should say, in response to SCQ, that it is never the case that two or more objects compose a single object. Some new technical terms will be useful in formulating this answer to SCQ. Let us define 'proper part' and 'simple' as follows.

> *x* is a *proper part* of *y* =df *x* is a part of *y* but *y* is not a part of *x*.[19]
>
> *x* is a *simple* =df *x* has no proper parts.[20]

Then the relevant answer to SCQ, which I will follow van Inwagen in calling "Nihilism," can be formulated as follows.

> **Nihilism:** Necessarily, for any *x*s, there is an object composed of the *x*s iff there is only one of the *x*s; i.e., the only objects that exist are simples.[21]

One main virtue of this view is that it can accommodate a certain intuition about composition that many people share, at least to some extent. This is the intuition that rearranging the simples of the world without changing their number cannot affect the number of objects in the world.[22] Another virtue of Nihilism is that one who subscribes to it need not worry about any of the traditional puzzles concerning the identity of composite objects.

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[19] 'Proper part' is sometimes defined as follows:

> *x* is a *proper part* of *y* =df *x* is a part of *y* and *x* is not identical to *y*.

But this definition has unwanted entailments with respect to examples like the notorious "statue and lump of gold" example. For on this definition, if the statue is distinct from the lump of gold, then the statue is a proper part of the lump of gold, and *vice versa*. For this reason I prefer the definition of 'proper part' given in the text over the definition given in this footnote. But nothing I will say below turns on the choice of one of these definitions over the other.

[20] An interesting - and often overlooked - question arises concerning physical simples, namely, Under what circumstances is it true of some physical object that it has no proper parts? For a discussion of this question, see Markosian, "Simples." I will ignore the question about simples in this paper, assuming only that there are such things as simples, and that what characterizes them is that they have no proper parts; I will not make any other assumptions here about the nature of physical simples.

[21] See van Inwagen's discussion of Nihilism in Section 8 of his *Material Beings*; Unger's discussions of a related view in "There Are No Ordinary Things," and "Skepticism and Nihilism;" and Horgan's discussion of Nihilism in "On What There Isn't."

[22] Van Inwagen develops this intuition nicely in Section 13 of *Material Beings*.

But there are serious difficulties associated with Nihilism. One of them concerns the fact that you and I are surely physical objects composed of many parts, if we exist at all; but according to Nihilism, there are no physical objects composed of many parts. So Nihilism seems to entail that you and I do not exist. And we can't have that.[23]

A more general difficulty facing Nihilism is that it entails that there are far fewer objects in the world than most of us take there to be. For Nihilism entails that there are no stars, chairs, bicycles, cats, dogs, or humans. (Or at least Nihilism and the assumption that there are no stars, chairs, etc., that are simples together entail that there are no stars, chairs, etc.) But this problem can be somewhat mitigated through a technique developed by van Inwagen.[24] This technique involves paraphrasing sentences that seem to be about composite objects[25] into sentences that in fact involve no ontological commitment to composite objects.

To see how this kind of paraphrasing works, consider the following sentence.

(2) There is a chair in the corner.

Since there are no chairs, according to Nihilism, the Nihilist must say that tokens of (2) are always, strictly speaking, false. But the Nihilist can nevertheless say that in many circumstances, tokens of (2) are, loosely speaking, true, because they can be paraphrased into something that is, strictly speaking, true, namely,

(3) There are some simples arranged chairwise in the corner.

By appealing to this kind of paraphrase, the Nihilist can claim that all of the tokens of sentences that appear to be about composite objects and that common sense would take to be true can be

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[23] One way out of this difficulty would be to say what Leibniz would have said about you and me, namely, that we are physical simples. But to me this seems almost as bad as saying that we do not exist. Another way out would be to say that you and I are non-physical objects, as Descartes apparently would have said. But this too seems unacceptable to me.

[24] See *Material Beings*, especially Sections 10-11. Van Inwagen develops the technique of paraphrasing in order to make his own answer to SCQ (see below) more plausible. But the technique will work for every answer according to which there are fewer composite objects than we would ordinarily take there to be, if it will work for any such answer.

[25] From now on I will use 'composite object' to mean *object composed of two or more parts*.

paraphrased into sentences that are, strictly speaking, true. And the Nihilist can also claim that all of the tokens of sentences that appear to be about composite objects and that common sense would take to be false - such as typical tokens of 'there is a chair on the ceiling' - cannot be paraphrased into true sentences. Thus Nihilism can be shown to be not as counter-intuitive as it at first appears.[26]

Despite the fact that the counter-intuitiveness of Nihilism can be somewhat lessened through the technique of paraphrasing, I think that Nihilism remains extremely counter-intuitive. Speaking for myself, at least, the relevant intuition is not merely that sentences like (2) are sometimes, loosely speaking, true; rather, the relevant intuition is that there really *are* such composite objects as stars and chairs, so that sentences like (2) are sometimes true, even when

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[26] There is a complication facing this method of softening the counter-intuitiveness of Nihilism by paraphrasing sentences that seem to be about composite objects into sentences about simples. Theodore Sider has shown that the kind of paraphrase illustrated by (2) and (3) above will not work in every possible situation. (See Sider, "Van Inwagen and the Possibility of Gunk.") Sider's argument involves the notion of "gunk," or matter that is forever divisible into smaller and smaller parts. For our purposes, 'gunk' can be defined as follows.

> *x* is composed of *gunk* =df it is not the case that there is a *y* such that *y* is a part of *x* and *y* is a simple.

(For a similar definition, see Sider, "Van Inwagen and the Possibility of Gunk," p. 286. Sider borrows the term 'atomless gunk' from Lewis. See Lewis, *Parts of Classes*, p. 20.) In a world composed entirely of gunk, there would be no true tokens of sentences like (3). Thus, although there could be circumstances in such a world in which common sense would say that tokens of (2) were true, the Nihilist cannot account for the relevant intuitions simply by translating (2) into (3), since the resulting tokens of (3) would also be false.

Still, this is not an insurmountable problem for Nihilism. The Nihilist can offer a paraphrase of (2) that will suffice in a gunk world, namely,

> (4) There is some gunk arranged chairwise in the corner.

But it must be noted that in a gunk world, there would be no material objects whatsoever, according to Nihilism, since there would be neither simples nor composite objects in such a world. Moreover, the possibility of a world containing both gunk and simples means that sentences like (3) and (4) cannot always serve as adequate Nihilistic paraphrases of sentences like (2). Instead, the Nihilist will require some neutral term - such as 'stuff' - to refer to generic matter, i.e., matter that is composed of some combination of gunk and simples. Then the Nihilist can accept the following as a suitable paraphrase of (2) in any possible situation.

> (5) There is some stuff arranged chairwise in the corner.

we are speaking strictly. That is, according to my intuitions, there simply are far more composite objects in the world than Nihilism allows. This seems to me to be a fatal objection to Nihilism, and I conclude, on the basis of this objection, that Nihilism is not the correct answer to SCQ.

Does Composition Take Place Wherever There is a Life?

Van Inwagen proposes an answer to SCQ that is very much worth considering. He calls the view "the Proposed Answer," but I will refer to it as "van Inwagen's Proposed Answer." For our purposes we can formulate van Inwagen's Proposed Answer as follows.

> **Van Inwagen's Proposed Answer (VIPA):** Necessarily, for any *x*s, there is an object composed of the *x*s iff either (i) the activity of the *x*s constitutes a life or (ii) there is only one of the *x*s.[27]

Although he does not define 'the activity of the *x*s constitutes a life', van Inwagen nevertheless does a remarkably good job of shedding light on the relevant concept.[28] In any case, I will not here question whether we understand what it is for an event to count as a life, and what it is for the activity of some objects to constitute such an event.

Van Inwagen gives a subtle and powerful defense of VIPA in *Material Beings*. In the process of doing so he raises many interesting issues that are beyond the scope of this paper. But there are, nevertheless, two objections to VIPA that seem to me to be fatal. The first is similar to the objection raised above against Nihilism: VIPA entails that there are far fewer composite objects in the world than my intuitions say there are. For VIPA entails that there are no inanimate objects composed of two or more parts. And while it is true that the counter-intuitiveness of VIPA can be lessened to some extent, through the kind of paraphrasing discussed above in connection with Nihilism, it remains true that VIPA cannot satisfy the intuition that there really are stars, chairs, and bicycles. Insofar as this is one of my most

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[27] Van Inwagen, *Material Beings*, p. 82.

[28] See *Material Beings*, Section 9, especially pp. 82-90.

fundamental intuitions, I take the inconsistency of VIPA with this intuition to be the basis for a fatal objection to VIPA.

There is a second objection to VIPA that I take to be fatal to that view. VIPA, when combined with certain plausible assumptions about life, entails that there can be genuine vagueness in the world; and this is a consequence that I am not willing to accept.

Van Inwagen freely admits that the relevant entailment holds, and he endorses the relevant assumptions about life. One of the assumptions is that it can be an indeterminate matter whether a given simple is caught up in a given life at a given time. Another is that it can be an indeterminate matter whether any life is occurring in a given situation. Given these assumptions, VIPA has the following consequences:[29]

> **The Vagueness of Parthood:** There can be situations in which it is indeterminate whether a certain object is a part of a certain other object.
>
> **The Vagueness of Composition:** There can be situations in which it is indeterminate whether any composite object is present.

And given a third assumption that van Inwagen also endorses - that it can be an indeterminate matter whether a life that occurs at one time is identical to a life that occurs at another time - van Inwagen's account of the persistence of organisms through time has the following consequence:[30]

> **The Vagueness of Identity:** There can be situations in which it is indeterminate whether a certain currently existing composite object is identical to a certain previously existing composite object.

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[29] See *Material Beings*, p. 228.

[30] See *Material Beings*, p. 228. Van Inwagen formulates Life, his thesis about the persistence of organisms through time, on p. 145 of *Material Beings*, where he says the following:

> If an organism exists at a certain moment, then it exists whenever and wherever - and only when and only where - the event that is its life at that moment is occurring; more exactly, if the activity of the *x*s at t_1 constitutes a life, and the activity of the *y*s at t_2 constitutes a life, then the organism that the *x*s compose at t_1 is the organism that the *y*s compose at t_2 if and only if the life constituted by the activity of the *x*s at t_1 is the life constituted by the activity of the *y*s at t_2.

I cannot accept these consequences of VIPA. For I endorse what van Inwagen calls the Linguistic Theory of Vagueness, as adumbrated by David Lewis in the following passage from *On the Plurality of Worlds*.

> The only intelligible account of vagueness locates it in our thought and language. The 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'. Vagueness is semantic indecision.[31]

The Linguistic Theory of Vagueness is not by itself inconsistent with the Vagueness of Parthood, the Vagueness of Composition, and the Vagueness of Identity. What is also needed is the claim that typical sentences about composition - such as '*x* is a part of *y*', 'there is a composite object in this situation', and 'the thing composed of the *x*s at t_1 is identical to the thing composed of the *y*s at t_2' - contain no terms that are vague in meaning. And this means that what is required is the claim that the vocabulary of mereology is not vague. But this seems to me to be the case. As Lewis says,

> But not all of language is vague. The truth-functional connectives aren't, for instance. Nor are the words for identity and difference, and for the partial identity of overlap. Nor are the idioms of quantification, so long as they are unrestricted. How could any of these be vague? What would be the alternatives between which we haven't chosen?[32]

For the reasons suggested by Lewis in these passages, then, I reject the Vagueness of Parthood, the Vagueness of Composition, and the Vagueness of Identity. I do not expect this Lewisean argument to convince everyone, however. For van Inwagen and others have argued, *contra* the Linguistic Theory of Vagueness, that there can be genuine vagueness in the world.[33]

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[31] Lewis, *On the Plurality of Worlds*, p. 212. The only thing Lewis says in this passage that I disagree with is the part about vagueness-in-the-world being unintelligible. For I believe that I understand the Vagueness of Parthood, the Vagueness of Composition, and the Vagueness of Identity; and each of those theses seems to me to entail that there is genuine vagueness in the world. But I also happen to think that the thesis that there is genuine vagueness in the world, when made intelligible in this way, is false.

[32] Lewis, *On the Plurality of Worlds*, p. 212.

[33] See, for example, van Inwagen, *Material Beings*, Sections 17-19; and Cowles and White, "Vague Objects For Those Who Want Them."

But I do expect the argument to be convincing to those of us who are inclined to accept the Linguistic Theory of Vagueness.

Does Composition Take Place Whenever Some Objects Are Fastened Together?

One answer to SCQ that is no doubt very close to the common sense view on the matter is, roughly, the view that if some objects are somehow fastened together then there is an object composed of those objects. This answer to SCQ can be formulated as follows.

> **Fastenation:** Necessarily, for any *x*s, there is an object composed of the *x*s iff the *x*s are fastened together.[34]

I think that Fastenation comes very close to capturing what would be the average person's initial response to SCQ. But I also think that, in the end, it is clear that neither Fastenation nor any variation on it is tenable. The first problem facing Fastenation is one that van Inwagen raises.[35] Suppose that van Inwagen and I shake hands, and suppose that just as we do so, our hands become paralyzed, so that we cannot pull them apart. Then, according to Fastenation, there is a new composite object in the world, one with van Inwagen and me as proper parts. But this seems (to many people at least) to be an unacceptable consequence.

Van Inwagen concludes on the basis of this objection that Fastenation is false. He later goes on to accept VIPA. This strikes me as a strange way to proceed. Accepting VIPA commits van Inwagen to the counter-intuitive consequence that there are no inanimate objects composed of two or more parts. This is a bullet that van Inwagen is willing to bite, but it is certainly a large bullet. Why not instead accept Fastenation, and also accept the consequence that two people

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[34] See van Inwagen, *Material Beings*, p. 56. Van Inwagen calls the view "fastening." But Mark Aronszajn and Fred Feldman have convinced me, in conversation, that this is a misnomer, since 'fastening' is a form of the verb that denotes the act of causing some things to become fastened together, rather than a word that denotes the relation *being fastened together*. And 'fastenedness', which does denote that relation, is too hard to pronounce.

[35] *Material Beings*, pp. 57-58.

whose hands are stuck together compose a larger object? Surely that is a smaller bullet to bite than the consequence that there are no inanimate objects composed of two or more parts.

Thus it seems to me that van Inwagen is overly hasty in rejecting Fastenation. Nevertheless, I think that there are convincing objections to Fastenation. To begin with, we may note that the relation *being fastened together* is one that admits of degrees. Things can be tightly fastened, or very loosely fastened. This raises a question for the Fastenator: To what degree must some *x*s be fastened together in order for it to be the case that there is an object composed of those *x*s? Answering this question with some specific number - say, .5 on a scale from 0 to 1 - seems implausibly arbitrary; why should it be that objects fastened together to degree .5 compose something, but objects fastened together to degree .499999999999999999 do not?

One natural way for the Fastenator to deal with the question about degrees of fastenation would be to say that any degree of fastenation greater than zero is sufficient. Then the Fastenator could accept this version of Fastenation:

> **Weak Fastenation:** Necessarily, for any *x*s, there is an object composed of the *x*s iff the *x*s are fastened together to some degree greater than zero.

There are, however, various problems with Weak Fastenation. One problem is that it faces van Inwagen's paralyzed handshakers objection. Another problem with Weak Fastenation is that it seems to yield bad results in cases in which some objects are fastened together, but only to some extremely small degree.

Consideration of the problem of objects that are fastened together to extremely small degrees suggests the following variation on Fastenation.

> **n-Fastenation:** Necessarily, for any *x*s, it is true to degree n that there is an object composed of the *x*s iff the *x*s are fastened together to degree n.

Unfortunately, n-Fastenation also faces serious difficulties. One problem facing n-Fastenation is that it presupposes that for any *x*s that are fastened together, there is some number, *n*, such that the *x*s are collectively fastened together precisely to degree *n*; yet it is not at all clear that this is true. Suppose there are some *x*s that are fastened together, but are such that some of the *x*s are fastened together to some very great degree - .999, say - while others of the *x*s are fastened

together to only a very small degree - say, .0001. Then to what degree are the *x*s collectively fastened together?

Perhaps the n-Fastenator can respond to this difficulty by stipulating that for any *x*s, the *x*s are collectively fastened together to whatever is the smallest degree to which some two of the *x*s are fastened together.

Even if n-Fastenation can be made coherent in this way, it is still subject to a serious objection, namely, that it entails the possibility of genuine vagueness in the world. For it should be clear that n-Fastenation entails the Vagueness of Composition. I take this to be a fatal objection to n-Fastenation.

In addition to the difficulties spelled out above for each of the versions of Fastenation, there is a general difficulty facing all of these views. The general difficulty is that we don't know what it means to say that some *x*s are fastened together.

One way to try to solve this problem would be to adopt the following definition of 'the *x*s are fastened together', which is based on a suggestion of van Inwagen's.[36]

> **DF1:** The *x*s are *fastened together* =df (i) the *x*s are in contact and (ii) among all the many sequences in which forces of arbitrary directions and magnitudes might be applied to any of the *x*s, at most only a few would be capable of separating the *x*s without damaging them.

While DF1 seems close to the common sense notion of fastenation, if the Fastenator accepts DF1 then he or she will be stuck with some very counter-intuitive results. The problem is that in what seem to be garden-variety cases of fastenation, the relevant subatomic particles are not in contact with one another.

This consideration suggests the following revision of DF1.

> **DF2:** The *x*s are *fastened together* =df among all the many sequences in which forces of arbitrary directions and magnitudes might be applied to any

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[36] See van Inwagen, *Material Beings*, pp. 56-57. Van Inwagen does not himself endorse DF1 as an acceptable definition of the common sense notion of fastenation. But he does not bother to try to improve upon DF1 because he is convinced, by the paralyzed handshakers example, that Fastenation is false in any case.

> of the *x*s, at most only a few would be capable of moving the *x*s away from one another without damaging them.

Unfortunately, the Fastenator who accepts DF2 will also be stuck with some very counter-intuitive results. Imagine a newborn calf with its mother. The two are extremely unwilling to be moved away from one another. Thus they will satisfy DF2. Thus the Fastenator who accepts DF2 will have to say that there is a composite object whose parts are the mother and calf. But surely that is an unacceptable result.

I do not know of any other, more promising definition of 'the *x*s are fastened together'. Perhaps the moral to be drawn is that that expression ought to be taken as primitive by the Fastenator.

Let me summarize the results of our discussion of Fastenation-type views. We have considered three such views. The first, Fastenation itself, was said to be susceptible to the paralyzed handshakers objection, and also to the problem of specifying which degree of fastenation is relevant to composition. It was suggested that the only three ways for the Fastenator to deal with this latter difficulty are (i) to pick some specific degree of fastenation, which would make the view unacceptably arbitrary, (ii) to adopt Weak Fastenation, and (iii) to adopt n-Fastenation. Weak Fastenation was said to be susceptible to two difficulties: the paralyzed handshakers objection and the objection that it is far too strong, since it entails that some *x*s that are only very weakly fastened together compose an object. The third of the three Fastenation-type views, n-Fastenation, was said to be subject to the objection that it entails that there can be genuine vagueness in the world. And finally, a general difficulty was raised for all of the Fastenation-type views, namely, that we do not have an adequate definition of 'the *x*s are fastened together'. I conclude that no Fastenation-type view is the correct answer to SCQ.

Does Composition Always Take Place?

Following van Inwagen, we can distinguish between two classes of answer to SCQ: moderate answers and extreme answers. 'Moderate answer' and 'extreme answer' can be defined as follows.[37]

> *A* is a *moderate answer* to SCQ =df (i) *A* is an instance of (S1), (ii) *A* entails that it is possible for two or more non-overlapping objects to compose something, and (iii) *A* entails that it is possible for two or more non-overlapping objects to fail to compose anything.
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> *A* is an *extreme answer* to SCQ =df (i) *A* is an instance of (S1), and (ii) *A* is not a moderate answer to SCQ.

VIPA and the different Fastenation-type answers are moderate answers to SCQ, for each of these theses entails that it is possible for some non-overlapping *x*s to compose something, and also that it is possible for some non-overlapping *x*s to fail to compose anything.

Meanwhile, Nihilism is an extreme answer to SCQ; for according to Nihilism, it is not possible for two or more non-overlapping objects to compose another object. Another extreme answer to SCQ is what van Inwagen calls "Universalism," which we can formulate as follows.

> **Universalism:** Necessarily, for any *x*s, there is an object composed of the *x*s iff no two of the *x*s overlap.[38]

Universalism says that any *x*s whatsoever, no matter how disparate and far apart they are, compose an object (provided, that is, that no two of the *x*s overlap; for if any two of the *x*s overlap then, by definition, the *x*s cannot compose anything). Thus, on this view, there are composite objects of the kinds that we normally take to exist - stars, chairs, bicycles, and humans - but also countless other composite objects that we would not normally take to exist. Among the latter, for example, would be an object composed of all of my shirts plus the Eiffel Tower.

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[37] *Cf*. *Material Beings*, pp. 61-62.

[38] For examples of Universalists, see Lewis, *On the Plurality of Worlds*, especially pp. 211-213, and *Parts of Classes*, especially pp. 72-87; and Jubien, *Ontology, Modality, and the Fallacy of Reference*, especially pp. 14-17.

There are two obvious virtues of Universalism. The first is that Universalism entails that there are more than enough composite objects to satisfy our intuitions on the matter. For there could never be a case in which our intuitions say that some (non-overlapping) *x*s compose an object but Universalism entails that those *x*s do not compose anything. The second obvious virtue of Universalism is that it entails neither the Vagueness of Parthood, the Vagueness of Composition, nor the Vagueness of Identity, so that it does not entail the possibility of genuine vagueness in the world.[39] (But it should be noted that several of the other responses to SCQ considered here, including BC, Nihilism, and Weak Fastenation, also do not entail the possibility of genuine vagueness in the world.)

Nevertheless, there is what seems to me a fatal objection to Universalism: Universalism entails that there are far more composite objects than common sense intuitions can allow. To give just one example, Universalism entails that the following sentence is true:

> (6) There is an object composed of (i) London Bridge, (ii) a certain sub-atomic particle located far beneath the surface of the moon, and (iii) Cal Ripken, Jr.

My intuitions tell me that there is no such object, and I suspect that the intuitions of the man on the street would agree with mine on this point. Indeed, it is hard to imagine the man on the street responding to (6) by saying, "Oh, sure, *that* object."

There is, however, a way for the Universalist to try to lessen the counter-intuitiveness of Universalism. The Universalist can insist that we ordinarily take our quantifiers to be restricted to more or less fastened-together objects that contrast with their surroundings, so that ordinary tokens of (6) are indeed false.[40]

I think that this move on the part of the Universalist goes part of the way toward easing the awkward counter-intuitiveness of the view. But I also think that ultimately the move fails to

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[39] In fact, Universalism is downright *inconsistent with* the Vagueness of Parthood and the Vagueness of Composition.

[40] See Lewis, *On the Plurality of Worlds*, pp. 211-213.

rescue Universalism from the jaws of untenability. For I think that the relevant intuition is not merely that we never (or rarely) talk about or quantify over such bizarre "objects" as the putative object described in (6). I think that the relevant intuition is, rather, that there simply *are* no such objects. On the basis of this objection I reject Universalism.

Could it Be that the Correct Answer to SCQ is a Series-style Answer?

It might be thought that the main problem with the above answers to SCQ is that they are too simple. In particular, it might be thought that the above answers generally go wrong in presupposing that there is some one relation that any *x*s must stand in in order for it to be the case that there is an object composed of those *x*s, no matter what the *x*s are like. For perhaps the truth of the matter is that there are different types of object in the world, and that for each such type, there is some unique relation such that whenever some *x*s of that type stand in that relation to one another, then there is an object composed of those *x*s. Jay Rosenberg suggests such a response to SCQ in the following passage.

> Once we give up the search for a chimerical single right answer to the SCQ, we can also abandon the notion that biology is somehow better suited to describe compositional causal relations than, say, physics or chemistry. Instead we can regard the *various* special sciences as, *inter alia*, telling us about the particular multigrade causal relations in virtue of which diverse (natural) *kinds* of components add up to determinate (natural) *kinds* of composites. Microphysics explains how protons, neutrons, and electrons compose different species of atoms, and physical chemistry, how atoms of various species compose different sorts of molecules.[41]

Although there is something very plausible in what Rosenberg says in this passage, there is also something very puzzling to me. The puzzling part is that Rosenberg seems to want to suggest that sciences such as microphysics, physical chemistry, and biology can help us to answer SCQ. This is puzzling to me because those sciences are, after all, empirical sciences, whereas a correct answer to SCQ would have to express a proposition that is necessarily true.

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41 Rosenberg, "Comments on Peter van Inwagen's *Material Beings*," pp. 705-06.

For this reason, it is hard for me to see how exploring any of the sciences mentioned by Rosenberg could help us to find a correct answer to SCQ.

But there is still, as I said, a very plausible idea suggested in this passage from Rosenberg, which idea is independent of the claim that the empirical sciences in question can shed light on SCQ. The idea concerns something like the following sentence schema.

> (SERIES) There is an object composed of the *x*s iff *either* the *x*s are F1s and related by R1, *or* the *x*s are F2s and are related by R2, *or* ... the *x*s are Fns and related by Rn.[42]

As a response to SCQ, this idea can be spelled out as follows.

> **The Serial Response to SCQ:** The correct answer to SCQ is an instance of SERIES.

It is worth noting that the Serial Response is, as it stands, not a proper *answer* to SCQ, since it is not itself a non-trivial instance of (S1). This is a characteristic that the Serial Response shares with BC, and their possession of this characteristic is the reason I call BC and the Serial Response "responses," rather than "answers," to SCQ.

The Serial Response is indeed inconsistent with all of the answers to SCQ considered above, since none of those answers is an instance of SERIES. And it might be thought that the Serial Response is inconsistent with BC as well, since the Serial Response entails that there *is* an answer to SCQ. This would be a mistake, however. For it is consistent with the Serial Response that there is no correct, non-trivial, and *finitely long* answer to SCQ. So let us distinguish between these two versions of the Serial Response:

> **The Finite Serial Response to SCQ:** The correct answer to SCQ is a finitely long instance of SERIES.
>
> **The Infinite Serial Response to SCQ:** The correct answer to SCQ is an infinitely long instance of SERIES.

Now, it should be clear that the Infinite Serial Response actually entails BC, so that it is no competitor to BC. Moreover, consideration of the Infinite Serial Response makes it easier to

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[42] *Cf*. van Inwagen's discussion of "series-style" answers to SCQ in Section 7 of *Material Beings*.

see an interesting fact about BC, namely, that BC does not actually entail BCF. For suppose that BC and the Infinite Serial Response are both true. Then there is a correct answer to SCQ in the form of an infinitely long instance of SERIES. Call that correct answer to SCQ "S". I know of no reason why it could not be the case that each disjunct of S is true precisely because whenever some *x*s of the relevant type compose an object, they do so *in virtue of* their standing in the relevant relation to one another (the relation picked out by the expression in place of 'R1', 'R2', ..., or 'Rn', that is). Thus it at least seems that BC and the Infinite Serial Response could both be true while BCF is false, which means that BC does not entail BCF.

I am nevertheless inclined to accept not only BC but also BCF. For it seems implausible to suppose that BC is true, and at the same time both (i) that each instance of composition obtains in virtue of some other fact's obtaining, and (ii) that there are in infinite number of other universals the instantiation of which can give rise to a case of composition. It seems to me much more plausible to suppose that if BC is true, then this must be *because* BCF is true. In any case, the Infinite Serial Response, as I have said, entails BC, so that it is certainly consistent with BC.

Now consider the Finite Serial Response. It is a response to SCQ that is inconsistent with any of the responses considered so far in this paper, including BC. Is the Finite Serial Response true? I think that although the Finite Serial Response is epistemically possible, there are nevertheless two good reasons for rejecting it. The first and main reason for rejecting the Finite Serial Response is simply that, as far as I know, no one has ever formulated an instance of SERIES that constitutes a plausible answer to SCQ. In the absence of such an instance of SERIES, the Finite Serial Response remains little more than an expression of unbridled optimism, comparable to the claim that, even though no one has yet discovered it, there nevertheless *is* a true, non-trivial, and finitely long instance of (S1).

The second reason for rejecting the Finite Serial Response is that, rather than avoiding the problems that afflict typical moderate answers to SCQ, the Finite Serial Response seems to compound those problems. In general, the problem with moderate answers to SCQ is that they must identify some multigrade relation that is linked in the relevant way with the concept of

composition; and, as I hope the preceding pages have made clear, it seems to be impossible to do this without generating very counter-intuitive consequences, and/or presupposing the possibility of genuine vagueness in the world. The Finite Serial Response apparently compounds the problem because it requires identifying not just one multigrade relation that is linked to the concept of composition in the relevant way, but several; and moreover, the Finite Serial Response also requires identifying several additional concepts (the referents of the expressions in place of 'F1', 'F2', etc.) that are also linked both to the concept of composition and to the relevant multigrade relations. Thus it seems to me that the prospects of anyone's discovering a plausible instance of SERIES are extremely dim.

Because no one has yet formulated a plausible instance of SERIES, and because the chances of anyone's doing so seem very slim, I think it is safe to say that the rational epistemic attitude to have toward the Finite Serial Response is disbelief. So I conclude that the Finite Serial Response is false.

The Argument by Elimination

We are now in a position to consider the main argument that I think demonstrates the truth of BC. I have said that Nihilism and Universalism are both false, since they both conflict with my intuitions about the nature and number of composite objects in the world. I have also said that each of the moderate answers to SCQ considered here is false. Now, I admit that I have not discussed every possible moderate answer to SCQ. But I think I have said enough to make plausible the following claim.

> **The Failure of Moderate Answers to SCQ:** Each moderate answer to SCQ is unacceptable because it either (a) is incoherent, (b) is susceptible to counter-examples, or else (c) entails that there can be genuine vagueness in the world.

But if the extreme answers are both false, and if all of the moderate answers are also false, then only one possibility remains: there is no true answer to SCQ. Thus we get the following argument for BC.

The Argument by Elimination

(1) Nihilism is false.
(2) Universalism is false.
(3) There is no true moderate answer to SCQ.
(4) If (1)-(3), then BC is true.

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(5) BC is true.

I readily admit that not everyone will be convinced by this argument. Nihilists and Universalists will of course reject premises (1) and (2), respectively. (But I suspect that many people will agree with me that Nihilism and Universalism are both so counter-intuitive that neither one of them can be true.) And people like van Inwagen - who are willing to accept the thesis that there can be genuine vagueness in the world, and/or some very counter-intuitive consequences about the universe's composite objects - will no doubt reject premise (3), opting for some moderate answer to SCQ.

But for my part, I find the argument convincing. Each of the premises is supported by some deeply felt intuition or intuitions about composition. Moreover, it seems to me that the relevant intuitions can be fairly described as the common sense intuitions about composition; so I suspect that many other people will, or at least should, find the argument convincing.

Of course, a coherent moderate answer to SCQ that is not susceptible to counter-examples and that does not entail that there can be genuine vagueness in the world would accord even better than BC with my intuitions. So if someone were to discover such an answer to SCQ, then I would endorse that answer, thereby rejecting premise (3) of the above argument. In the meantime, however, I am inclined to accept BC. For of all the known responses to SCQ, it alone is consistent with my pre-theoretical views about the world's composite objects.

5 Some Objections to Brutal Composition

Now it is time to consider some objections to BC. Terence Horgan discusses a view that seems to me to be roughly equivalent to BC, and he rejects that view. Perhaps in his reasons for rejecting the relevant view we can find a good objection to BC. Here is the passage in which Horgan formulates something like BC:

> Let me pose a question that van Inwagen himself does not pose: Why assume that the SCQ even *has* an answer of the kind sought? I.e., why suppose that the answer is general and systematic - that there are tractably specifiable conditions such that necessarily, several things compose a single thing iff they meet those conditions? We can imagine a philosophically minded defender of tables and chairs posing this question, and then arguing as follows in response to van Inwagen:
>
> > A *correct* answer to the SCQ would be one that entails the reality of inanimate beings of the kind that ordinary belief takes to be real. Suppose that, as Van Inwagen argues, any initially plausible answer to the SCQ that is general and systematic, and that also confers reality upon tables and chairs, also has wildly counterintuitive consequences. If so, then so much the worse for the search for *that kind* of answer to the SCQ; no such answer is to be had. (Maybe a complete and correct answer to the SCQ could only take the form of an infinite, nonsystematizable, hodgepodge, *list*. Each item on the list would consist of (i) a description of a single, quite specific, situation; and (ii) a specification of whether or not, in this particular situation, several things compose a single thing.) In short, the desideratum of preserving our ordinary beliefs about such matters is more important in metaphysical theory construction than the desideratum of giving a general and systematic answer to the SCQ; so if the two desiderata should come into conflict, then the former trumps the latter.[43]

It seems to me that the thesis that Horgan is imagining someone proposing in response to SCQ amounts to BC. But Horgan rejects the thesis. For in the next paragraph he goes on to say the following:

> This way of defending common belief against van Inwagen seems distinctly implausible. Why? In large part, I suggest, because an adequate metaphysical theory - like an adequate scientific theory - should be itself systematic and general, and should keep to a minimum the unexplained facts that it posits. In particular, a good metaphysical theory or scientific theory should avoid positing a plethora of quite specific, disconnected, *sui generis*, compositional facts. Such facts would be ontological danglers; they would be metaphysically queer. Even though explanation presumably must bottom out somewhere, it is just not credible - or even intelligible - that it should bottom out with specific compositional facts which themselves are utterly unexplainable and which do not conform to any systematic general principles. Rather, if one bunch of physical simples compose a genuine physical object, but another bunch of simples do not compose any genuine object, then there must be some reason *why*; it couldn't be that these two facts are themselves at the explanatory bedrock of being.[44]

One claim that Horgan seems to be making in this passage is that the concept of composition must be linked by systematic, general principles to some other concepts. At first glance it may seem like this objection is easily met: we need only to point out that, even

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[43] Horgan, "On What There Isn't," pp. 694-95.

[44] Horgan, "On What There Isn't," p. 695.

according to BC, the concept of composition is linked by systematic, general principles to other concepts; for, as the standard definitions in mereology make clear, composition is linked by such principles to the other mereological concepts.

But I suspect that Horgan would not be impressed by this reply to his objection. Presumably what he wants is for composition to be linked by systematic, general (and illuminating) principles to some *non-mereological* concepts. And here I think that BCers must bite the bullet - we must admit that composition is not linked by any such principles to any non-mereological concepts. But I do not find this claim to be wildly implausible. Moreover, it seems to me that the plausibility of any such thesis depends precisely on whether there are any plausible principles of the relevant kind. And the results of our investigation into the most promising answers to SCQ suggest that there are no plausible, systematic, general (and illuminating) principles linking composition to any non-mereological concepts. In light of this, BC seems eminently plausible to me.

Another claim that Horgan seems to be making in the above passage is that facts about composition must be explainable in terms of non-mereological facts. This is a tricky claim to evaluate, insofar as the concept of explanation has a pragmatic component.[45] It is for this reason that I defined 'brute fact' above in terms of the *in virtue of* relation, rather than in terms of explanation. But perhaps Horgan's point can be understood as the claim that facts about composition must obtain in virtue of some non-mereological facts. That is, perhaps we can understand Horgan as claiming that BCF is incredible.

One point that I would make here is that Horgan's remarks in the passage quoted above do not constitute an *argument* against BCF. (I suspect that Horgan did not intend for his remarks

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[45] See in this regard van Fraassen, *The Scientific Image*. Given the pragmatic component of explanation, it turns out that almost any fact can be (at least part of) a good explanation for almost any other fact. Thus, even if BC and BCF were both true, it would still be possible for there to be a good explanation of some compositional fact in terms of some non-mereological facts.

to be taken as an argument against BCF; I suspect that he simply meant for his remarks to register his strong intuitions against any such thesis.)

Another thing that I would say in response to the claim that BCF is incredible is that I personally find BCF credible. For it seems to me that the concept of composition possesses the three characteristics mentioned in Section 3 above - (i) being relatively easy to grasp on an intuitive level, (ii) being such that there seem to be clear-cut cases of both instantiation and non-instantiation, and (iii) being such that no account of what it is in virtue of which some *x*s instantiate that concept seems to be forthcoming - that make a concept a likely candidate for being assigned the status of brutality in our theorizing.

A third point to be made in response to the claim that BCF is incredible is that there must be some theses relevantly similar to BCF that are actually true. That is, there must be some concepts whose instantiations are brutal. For to suppose otherwise is to commit oneself to either infinite regress or circularity. Horgan is of course aware of this; his point is that he does not find it plausible that composition should be one of the brutal concepts. And I have to admit, even though I endorse BCF, that Horgan's attitude is a healthy one. It is healthy always to assume at first that the members of a given set of facts are not brutal, and to expect to be able to discover other facts in virtue of which the members of that set obtain. But I also think that there are times when it is appropriate to believe that the members of a certain set of facts *are* brutal. In particular, if apparently exhaustive attempts at identifying which facts it is in virtue of which the members of a given set of facts obtain have failed, then the claim that the relevant facts are brutal should no longer be considered implausible. And I think that this is indeed the case with regard to the set of compositional facts, so that the time has come for us to give up our initial skepticism toward BCF and to begin to consider it plausible.

A related objection to BC, which Horgan may intend to be suggesting in the passage quoted above, concerns the idea of choosing a theoretical position that is consistent with intuitions about particular cases over a theoretical position that is consistent with intuitions about general principles, when intuitions of the two kinds are pitted against each other. For we can

distinguish between two views about how to respond to such conflicts of intuitions: Particularism, according to which the intuitions about particular cases should win out, and Generalism, according to which the intuitions about the general principles should win out . In this paper I have in effect argued that our intuitions about particular cases of composition outweigh our intuitions favoring the general principle that there must be answers to questions like SCQ. But, it might be objected, in thus defending BC I have given no argument for Particularism over Generalism.

I plead guilty. I have given no argument for Particularism over Generalism. In fact, I don't even endorse Particularism. Nor do I endorse Generalism. My view is that there are times when we should choose a theoretical position that is consistent with intuitions about particular cases, even though those intuitions conflict with intuitions about general principles, and other times when we should choose a theoretical position that is consistent with intuitions about general principles, even though those intuitions conflict with intuitions about particular cases. In short, I think we should take these cases, in which conflict arises between the two kinds of intuition, on a case by case basis, rather than adopting either Particularism or Generalism as a rule. Moreover, I think that our basis for deciding in these cases should be the same as our basis for deciding between conflicting intuitions in general: we should weigh all of the options, consult our intuitions, and then choose the overall theoretical position that fits best with those intuitions.

My argument in this paper, then, is not based on an appeal to Particularism over Generalism. Rather, my argument involves the claim that the overall theoretical position that best fits standard intuitions about composition and other metaphysical matters - including the intuition that there ought to be an answer to SCQ - is one that incorporates BC.

Another objection to BC comes from Theodore Sider, who has suggested an interesting argument against the view.[46] Here is a modified version of Sider's argument. The proponent of

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[46] In Sider, "Four Dimensionalism and Vagueness," pp. 18-22. Sider presents his version of the continuum argument as part of a larger argument for Universalism, and the larger argument for

BC has to say that there can be cases in which two or more objects compose a larger object and also cases in which two or more objects fail to compose a larger object.[47] So consider a pair of possible cases such that the simples in one case compose an object, and the simples in the other case do not. Now imagine further a series of cases that "connect" the two original cases, so that any two adjacent cases in the series are near-duplicates of each other with regard to any respect that one might take to be relevant to the question of whether composition occurs: the number of simples involved, the spatial proximity of those simples to one another, the degree to which those simples are fastened together, etc. (Depending on how many cases you are willing to consider, the series can be such that any two adjacent cases are arbitrarily close to being qualitative duplicates in the relevant respects.) Now, here is the rub. Since we have at one end of the series a case of composition, and at the other end a case of non-composition, it follows that somewhere in the series there will be a pair of adjacent cases such that in one case composition occurs and in the other case composition does not occur. Thus, there will be two cases that are near-duplicates of each other in all of the other respects, but that differ with respect to composition. And that seems implausible. Thus, this "continuum argument" seems to show that BC is false.

I think that there are two good replies to this argument available to the BCer. Here is the first reply. The continuum argument is plausible only because of the intuition that the respects that vary gradually along the series - the number of simples involved, the spatial proximity of those simples to one another, the degree to which those simples are fastened together, etc. - are relevant to composition. In particular, the continuum argument is plausible because we intuitively think that composition must occur in a particular case in virtue of the number of simples involved in that case, or the spatial proximity of those simples to one another, or the

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Universalism is based on Lewis's argument for the same view. See Lewis, *On the Plurality of Worlds*, pp. 211-213.

[47] Otherwise, either Nihilism or Universalism would be true.

degree to which those simples are fastened together, etc. But here the above considerations against moderate answers to SCQ are relevant. It's true that we have intuitions according to which the factors that vary across the series are relevant to determining whether composition occurs. But it's also true that when you try to follow up those intuitions, and formulate answers to SCQ based on them, you end up with a set of moderate answers, each member of which has serious problems.[48] So we know that those intuitions have to be given up. The upshot, according to this line of reasoning, is that you can't get a good argument based on the relevant intuitions, since we already know that those intuitions lead to implausible answers to SCQ.

According to this reply to the continuum argument, then, it's true that there is an "abrupt cutoff" in the relevant series of cases (where an "abrupt cutoff" in the series is a pair of adjacent cases such that in one case composition occurs while in the other case it does not), but this does not pose a problem for the view. A BCer who makes this response to the argument might draw the following analogy. Suppose someone claims that people who are left-handed are not left-handed in virtue of being any particular height. And suppose someone else argues against this claim by pointing to a series of possible cases ranging from a five-foot-tall left-hander at one end of the series to a seven-foot-tall right-hander at the other end of the series. It would be implausible to argue that there could not be an "abrupt cutoff" in this series of people (i.e., a pair of adjacent cases in which two people who are near-duplicates with respect to height differ with respect to being left-handed), precisely because we don't think that a person's height determines whether that person is left-handed. Similarly, the BCer can say, once we accept that composition does not occur in virtue of the number of simples involved in a given case, or the spatial

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[48] Among the respects that one might take to be relevant to the question of whether composition occurs are qualitative continuity, qualitative homogeneity, unity of action, and comprehensiveness of causal relations. (These are all respects listed by Sider as ones that might be taken to be relevant to the question of whether composition occurs. See Sider, "Four Dimensionalism and Vagueness," p. 18.) I have not discussed above the various answers to SCQ that result from trying to develop the intuitions that these different respects are relevant to determining whether composition occurs. But I trust that the reader can see for himself or herself how the various answers would go, and also what the problems would be for each of them.

proximity of those simples to one another, or the degree to which those simples are fastened together, etc., then we will see that there is nothing implausible about an abrupt cutoff in the series of cases described in the continuum argument.

The above reply to the continuum argument is the one that I happen to prefer. But there is a second reply to the argument available to the BCer. If the BCer still wants to avoid saying that there could be an abrupt cutoff in the relevant series of cases, despite what I have just said, then the BCer can do so by claiming that there are cases in the series that are indeterminate with regard to composition. That is, the BCer can say that it is sometimes an indeterminate matter whether composition occurs in a particular case, so that, as the other factors slowly change along the series of cases described in the continuum argument, so does the degree (on a scale from 0 to 1, say) to which composition occurs.

The problem with this second response to the continuum argument is that it undermines some of the arguments that were used above against some of the moderate answers to SCQ. For some of those arguments were based on a rejection of the Vagueness of Composition.[49] So to the extent that a BCer argues against certain moderate answers to SCQ by rejecting the Vagueness of Composition, to that extent he or she cannot adopt this response to the continuum argument. But there were other arguments against the relevant moderate answers to SCQ, arguments that were not based on a rejection of the Vagueness of Composition. There were also arguments based on the counterintuitive consequences of the relevant moderate answers (no chairs according to VIPA) or the unintelligibility of those answers (we don't know what 'the *x*s are fastened together' means). Thus, the BCer could eschew the arguments based on denying the Vagueness of Composition, reject the relevant moderate answers to SCQ because of their counterintuitive consequences or unintelligibility, and then respond to the continuum argument by claiming that it can be an indeterminate matter whether composition occurs in a given case, so that there will be no abrupt cutoff in the series of cases described in the argument.

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[49] See p. 12 above.

The upshot is that there are two main responses to the continuum argument available to the BCer. The BCer could admit that there is an abrupt cutoff somewhere along the relevant series of cases, and simply insist that this is okay, since composition never occurs in virtue of any of the factors in question. Or, alternatively, the BCer could forego arguments against moderate answers to SCQ that are based on a rejection of the Vagueness of Composition, and then respond to the continuum argument by endorsing the Vagueness of Composition and claiming that there is no abrupt cutoff anywhere in the relevant series. Either way, it seems to me, there is a good response to the continuum argument available to one who endorses BC.

Here is a final objection that might be raised against BC, and the way in which I have argued for BC in this paper. My argument involved saying that various answers to SCQ are inconsistent with my intuitions about compositional matters. On that basis I ruled out every answer to SCQ that was considered, and concluded that BC must be true. But, it might be objected, BC does not entail that my intuitions about compositional matters are actually true. BC does not entail, for example, that the objects that I would intuitively consider "the parts of my bicycle" actually compose anything. In general, BC is consistent with there being a body of compositional facts about the world that are just as counter-intuitive as those posited by Universalism, or any other answer to SCQ. Hence, the objection would go, there is no good reason to prefer BC over Universalism or any other response to SCQ.

I think that this objection is a good one right up until the final inference. I agree that BC does not entail that my intuitions about compositional matters are actually true. And I agree that BC is consistent with there being a body of compositional facts that are highly counter-intuitive. But I don't think it follows from these things that there is no good reason to prefer BC over any other response to SCQ. For the fact that BC is the only response available that is consistent with my intuitions about compositional matters seems to me a good reason to prefer BC over the other responses. And if you share the relevant intuitions, then you also have a good reason to prefer BC over its rivals.

6 Some Advantages of Brutal Composition

I would like to close by briefly discussing some advantages of accepting BC. One such advantage concerns Peter Unger's Problem of the Many. Here is a passage from *Material Beings* in which van Inwagen presents, on behalf of his interlocuter, one version of the Problem of the Many:

> Suppose for the moment that you exist. Consider the set of simples S whose members compose you. Now consider all the sets of simples that have 'nearly the same members as' S (it will make no difference to our argument how we spell out this rather vague requirement) and whose members and the members of S are equally well suited to compose a man. Having got these sets before your mind's eye, forget our momentary supposition that you exist. (There obviously exist sets having the properties of the sets we are now considering, whether or not you exist.) Now, which of these sets is such that its members compose something? What principle of selection will you apply to them to determine which of them is the set the members of which compose something?[50]

Van Inwagen's response to the Problem of the Many is to admit that there is genuine vagueness in the world. According to van Inwagen, parthood comes in degrees, and various simples are parts of van Inwagen to various degrees. Thus, for example, a simple located deep inside his brain might be a part of van Inwagen to degree 1, while another simple that has just recently been inhaled into his lung might be a part of van Inwagen to degree .1. And while there is no such set as "the set of simples that compose van Inwagen," there is nevertheless a "fuzzy set" of simples that compose van Inwagen, where membership in a fuzzy set is a matter of degrees. This is an ingenious solution to the Problem of the Many, and variations on it will work for other moderate answers to SCQ. But of course this kind of approach is available only to those who are willing to accept the possibility of genuine vagueness in the world.

For the Universalist, the Problem of the Many is essentially a problem of there being too many composite objects in a vicinity where we would like to say there is a man. For according to Universalism, each of the sets of simples we are considering from van Inwagen's above example

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[50] Van Inwagen, *Material Beings*, p. 217. For Unger's presentation of the Problem of the Many, see Unger, "The Problem of the Many." For van Inwagen's solution to the Problem of the Many, see van Inwagen, *Material Beings*, Section 17.

is such that its members compose something. Are all of the relevant composite objects men? If so then we are faced with a plurality problem that seems far worse than the prospect of many merely possible fat men standing in a doorway; for in this case we shall have, whenever an actual man stands in a doorway, millions of other actual men all standing in that same doorway. And if not all of the relevant composite objects are men, then we are faced with a new host of difficulties. Which one is a man? Do we ever succeed in referring to any man? If so, how? And do different people ever succeed in referring to the same man?

Meanwhile, the BCer has an easy solution to the Problem of the Many. The BCer can simply maintain that not every set of objects is such that the members of that set compose anything. Thus, in response to the above example from van Inwagen, the BCer can claim that only one of the relevant sets is such that its members actually compose anything, namely, the one whose members compose the person in question. And when the BCer is asked why it is that the members of that set compose something while the members of the other relevant sets do not, he or she can just shrug and say, "There is no reason. It is a brute fact." I consider the ease with which the BCer can dispense with the Problem of the Many to be an important virtue of the view.

Similarly, the BCer will have an easy time dealing with the Paradox of Undetached Parts. Here is a way of stating this paradox:[51]

> Let 'Tibbles' refer to some cat, and let 'Tib' refer to the part of Tibbles that consists of the cat minus its tail. Suppose that by tomorrow Tibbles will have lost her tail. Since Tibbles will surely survive this loss of a part, Tibbles will continue to exist tomorrow. And since Tib will not have suffered the loss of any part between now and then, Tib will also continue to exist tomorrow. Tomorrow, Tibbles and Tib will be identical, since they will occupy exactly the same region and will have exactly the same parts. But today, Tibbles and Tib are not identical, since they occupy different regions and have different parts. And thus we seem to have in this case a violation of the transitivity of identity, since the following all seem to be true:

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[51] For discussions of the Paradox of Undetached Parts, see, for example, Wiggins, "On Being in the Same Place at the Same Time;" van Inwagen, "The Doctrine of Arbitrary Undetached Parts;" Heller, *The Ontology of Physical Objects: Four-dimensional Hunks of Matter*, pp. 2-4; and Burke, "Dion and Theon: An Essentialist Solution to an Ancient Puzzle."

(a) The thing that is Tibbles today is identical to the thing that is Tibbles tomorrow.

(b) The thing that is Tib today is identical to the thing that is Tibbles tomorrow.

(c) The thing that is Tibbles today is not identical to the thing that is Tib today.

Various solutions to the Paradox of Undetached Parts have been proposed. For example, it has been argued (correctly, I believe) that one who endorses the 4D view of physical objects will have an easy time with the paradox.[52] And this has been taken by some as evidence favoring the 4D view over its rival, the 3D view. Meanwhile, 3D theorists have proposed their own solutions to the Paradox of Undetached Parts, most involving controversial claims about identity, constitution, and/or essentialism.[53] A consideration of all of the proposed 3D solutions to the Paradox of Undetached Parts would be beyond the scope of this paper. But I want to suggest that, at least among 3D responses to the Paradox of Undetached Parts, there is no solution that is simpler and neater than the solution available to the BCer. For the BCer can simply deny that there is now such an object as Tib, consisting of all of Tibbles except for the tail. The BCer can consistently say that, although certain simples compose Tibbles, the simples that might be taken to compose "Tibbles minus Tibbles's tail" simply do not compose anything (right now, when Tibbles still sports her tail). And if the BCer is asked why it is that the members of the one set of simples compose something while the members of the other set do not, the BCer can happily answer, "No reason. These are just brute facts."[54] I take it that the ease with which BC allows the 3Der to dispense with the Paradox of Undetached Parts is another important virtue of BC.[55]

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[52] See, for example, Heller, *The Ontology of Physical Objects: Four-dimensional Hunks of Matter*. For more on the formulations of the 3D and 4D views, see Markosian, "The 3D/4D Controversy and Non-present Objects."

[53] See, for example, Wiggins, "On Being in the Same Place at the Same Time," and Burke, "Dion and Theon: An Essentialist Solution to an Ancient Puzzle."

[54] Although I have generally not discussed issues concerning the identity over time of composite objects in this paper, it seems to me that consideration of cases in which an object seems to gain or lose a part suggests that the BCer should also adopt the view that the identity over time of composite objects is a brutal matter. Thus, for example, it seems to me that the BCer

ought to say that it is just a brute fact that the tailless Tibbles of tomorrow is identical to the Tibbles of today.

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REFERENCES

Burke, Michael, 1994, "Dion and Theon: An Essentialist Solution to an Ancient Puzzle," *The Journal of Philosophy* **91**: 129-139.

Cowles, David W., and White, Michael J., 1991, "Vague Objects For Those Who Want Them," *Philosophical Studies* **63**: 203-216.

Eberle, Rolf A., 1970, *Nominalistic Systems* (Dordrecht: Reidel).

Goodman, Nelson and Leonard, Henry, 1940, "The Calculus of Individuals and Its Uses," *Journal of Symbolic Logic* **5**: 45-55.

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

Hestevold, H. Scott, 1980-81, "Conjoining," *Philosophy and Phenomenological Research* **41**: 371-83.

Hirsch, Eli , "Peter van Inwagen's *Material Beings*," *Philosophy and Phenomenological Research* **53**: 687-91.

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

Jubien, Michael, 1993, *Ontology, Modality, and the Fallacy of Reference* (Cambridge: Cambridge University Press).

Lesniewski, Stanislaw, 1983, "On the Foundations of Mathematics," *Topoi* **2**: 3-52. (This is an abridged English translation of Lesniewski's 1927-1931 pioneering papers on mereology; see Lewis, *Parts of Classes*, p. 72n for references to Lesniewski's Polish-language papers.)

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

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

Markosian, Ned, 1994, "The 3D/4D Controversy and Non-present Objects," *Philosophical Papers* **23**: 243-49.

Markosian, Ned, 1996, "Simples," unpublished manuscript.

Markosian, Ned, 1996, "What Are Physical Objects?" unpublished manuscript.

Persson, Ingmar, 1993, "Critical Study of van Inwagen's *Material Beings*," *Nous* **27**: 512-18.

Prior, Arthur, 1955, *Formal Logic* (Oxford: Oxford University Press).

Rosenberg, Jay F., 1993, "Comments on Peter van Inwagen's *Material Beings*," *Philosophy and Phenomenological Research* **53**: 701-08.

Sider, Theodore, 1993, "Van Inwagen and the Possibility of Gunk," *Analysis* **53**: 285-89.

Sider, Theodore, 1996, "Four Dimensionalism and Vagueness," unpublished manuscript.

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

Tarski, Alfred, 1956, *Logic, Semantics, Metamathematics* (Oxford: Oxford University Press).

Unger, Peter, 1979, "There Are No Ordinary Things," *Synthese* **41**: 117-54.

Unger, Peter, 1980, "The Problem of the Many," in French, Uehling and Wettstein (eds.) *Midwest Studies in Philosophy*, Volume V (Minneapolis: University of Minnesota Press): 411-467.

Unger, Peter, 1980, "Skepticism and Nihilism," *Nous* **14**: 517-45.

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

Van Inwagen, Peter, 1981, "The Doctrine of Arbitrary Undetached Parts," *Pacific Philosophical Quarterly* **62**: 123-37.

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

Van Inwagen, Peter, 1993, "Precis of *Material Beings*," *Philosophy and Phenomenological Research* **53**: 683-86.

Van Inwagen, Peter, 1993, "Reply to Reviewers," *Philosophy and Phenomenological Research* **53**: 709-19.

Wiggins, David, 1968, "On Being in the Same Place at the Same Time," *The Philosophical Review* **77**: 90-96.