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THE EMERGENCE OF OBJECTS:
A STUDY IN CONSTITUTION

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF PHILOSOPHY

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Table of Contents

Abstract page vii

Chapter 1: *Introduction* 1

Chapter 2: *The Problem of Material Constitution*
- I. Chapter Intro 9
- II. The Ship of Theseus 10
  - 1. The Ship of Theseus and Material Constitution 14
  - 2. Problems with the Ship of Theseus 21
- III. Tibbles the Cat 31
- IV. Lumpl and Goliath or The Statue and the Clay 41
- V. Conclusion 45

Chapter 3: *Reductions and Parts*
- I. Chapter Introduction 47
- II. Frederick Doepke: Reduction and Constitution 48
  - 1. Doepke's Account of the 'is' of Constitution 49
  - 2. Doepke's Anti-Reductivist Argument 54
  - 3. Doepke's Asymmetry and the Constitution of the Body 58
  - 4. On What Constitutes the Body: The Reductivist Response 63
- III. Judith Jarvis Thomson: Mereology and Constitution
  - 1. Thomson's Mereological View 67
  - 2. Thomson's Mereological View: The Sequel 72
    - *A. Constitution Defined* 73
    - *B. Fusions* 76
    - *C. Fusions Evaluated* 81
    - *D. Thomson's Tri-level Ontology* 90
  - 3. Thomson's View Assessed 92

Chapter 4: *Properties on Loan*
- I. Chapter Introduction 95
- II. Lynne Rudder Baker: Constitution and Property Borrowing 96
  - 1. Baker's View 97
  - 2. Property Borrowing Demystified 107
- III. Baker's View Considered 113
  - 1. Separate Union 114
  - 2. Baker's Downward Property Borrowing Thesis 117
    - *A. Countering Baker's Counterexamples* 120
  - 3. Borrowing Primary Kind Properties 134
    - *A. Clarifying Baker's View* 135
    - *B. Extraneous Primary-kind Properties* 139

4. Sorting Out Counting in Baker's World 143
A. The Problem–Multiplying Kinds 144
B. Baker's Response–What She Needs 145
C. What She Cannot Have 149

Chapter 5: *The Emergence of Objects: Constitution in the World*
I. Introduction 156
II. Compositional Principles and K-wise Arrangement: Two Intrinsic Theories
1. Compositional Principles 156
2. K-wise arrangement 163
III. Material Constitution: The Emergence of Objects 165
1. Material Constitution: Formally Stated 166
2. Material Constitution: Explained and Defended
A. Similar/Dissimilar 171
i. General Properties: Mass Objection 172
ii. Special Properties: Difference in Kind 174
B. Intrinsic/Extrinsic 177
C. Constitution and Supervenience 179
IV. Material Constitution Applied: Baseball and God 183
1. Social Entities: Baseball 183
2. Religious Entities: God 187
A. God and Creation 187
V. Conclusion 193

Chapter 6: *Conclusion* 194

Bibliography 198

Abstract

In this dissertation I first motivate the need for the constitution relation by raising what Michael C. Rea has called the problem of material constitution and arguing that many of the so-called solutions of the problem do not in fact resolve it. I then look to recent accounts of constitution in the literature and focus on five for a thorough statement and critical appraisal: Frederick Doepke, Judith Jarvis Thomson, Lynne Rudder Baker, Samuel Levey, and Michael C. Rea. In each case I argue that the view is either incomplete, commits one to dubious entities and/or other consequences (e.g., top-down property borrowing) that are themselves unwarranted, or is incapable of accounting for paradigm cases of constitutionally related objects. Finally, I offer my own view of the constitution relation which accounts for an object's extrinsic relations as well as its intrinsic features, fully explains both the similarity and the dissimilarity among constitutionally related objects (without multiplying kinds), and is consistent with supervenience. In the end, I offer a view that is sufficiently robust to account for all constitutionally related phenomena in the world.

Chapter 1

Introduction

When the ancient Greek philosopher Aristotle asked whether or not Socrates and Socrates-seated were the same thing, he did not ask an idle question.[1] Nor was his question simply about the identity of objects, in this case persons, over time. It was a much deeper question, one that raised a number of philosophical issues that have haunted philosophers across the centuries since Aristotle first penned those words. It is with one of those issues–in particular, the relationship that obtains between Socrates and Socrates-seated–that I am concerned in this dissertation. More to the point, I intend to determine just what manner of the "sameness" relation Socrates bears to Socrates-seated. Is Socrates identical to Socrates-seated in the strict sense, in some definable non-strict sense, or is there some other relation, similar to identity in some respects but dissimilar to identity in other respects, that is better suited to make sense of the relation in question? While others have formulated interesting interpretations of Aristotle on just this matter[2], I

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[1] *Metaphysics IV* (1004b2) in McKeon, Richard. The Basic Works of Aristotle. (New York, NY: Random House, 1941).

[2] For example, see Gareth Matthews, "Accidental Unities" in Language and Logos, ed. by Malcolm Schofield and Martha Nussbaum (New York, NY: Cambridge University Press, 1982), 223-240, and "On Knowing how to Take Aristotle's Kooky Objects Seriously" presented at the Pacific Division Meeting of the APA in Portland, Oregon; Nicholas White, "Aristotle on Sameness and Oneness", *Philosophical Review*, 80 (1971); David Bostock, "Aristotle on the Principles of Change", in Language and Logos, ed. by Malcolm Schofield and Martha Nussbaum (New York, NY: Cambridge University Press, 1982), 179-196; Michael C. Rea, "An Aristotelian Solution to the Problem of Material Constitution", presented at the Eastern Division Meeting of the APA in New York, NY,

am not especially concerned with Aristotle here. Indeed, while his is an interesting formulation of the puzzle that I address, there are other more contemporary formulations of the issue that have gained notoriety in the past half century, and it is to these treatments that I turn to explore, in the succeeding chapters, the puzzle that Aristotle first envisaged.

Although I provide an extended statement and initial treatment of the problem in the next chapter, it is important that I give a brief statement here in order to provide initial motivation for the rest of the dissertation. The first order of business is to address the *prima facie* relationship that exists between, say, a statue and its compositional matter: namely, numerical identity.

The identity relation is a technical notion in philosophy. In common, everyday sorts of expression, 'identity' very often means something like 'the same as' or 'very similar to'. For example, we often refer to twins as identical, or to two cars of the same make, model, year, and color as identical. But this kind of identity, called qualitative identity, is not the relevant identity being referred to here. The identity relationship we are concerned with is one of numerical identity. That is, we are concerned with the relationship between x and y that says that there is only one *thing* present and x and y are both *it*. For example, the Morning Star and the Evening Star are said to be identical in this sense. Both 'the Morning Star' and 'the Evening Star' refer to Venus, so they are the same thing.

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and "Introduction" in Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997b): pp. xv-lvii; and Ernst Sosa, "Subjects among other Things" *Philosophical Perspectives, 1, Metaphysics, 1987*; reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 63-92.

A look at the formal properties of numerical identity will make the relation more clear. Briefly, numerical identity is symmetrical ($x = y$ if and only if $y = x$), transitive ($x = y$ and $y = z$ only if $x = z$), and reflexive (for any x, $x = x$). Further, common among philosophers is the view that numerical identity satisfies Leibniz's Law. Leibniz's Law is taken to be either:

> (1) $(x)(y)((F)(Fx \leftrightarrow Fy) \rightarrow (x = y))$: the principle of the identity of indiscernibles. That is, if *x* has a property if and only if *y* has the same property, then *x* is identical to *y*, or
>
> (2) $(x)(y)((x = y) \rightarrow (F)(Fx \leftrightarrow Fy))$: the principle of the indiscernibility of identicals. That is, if *x* and *y* are identical, then *x* has a property if and only if *y* has the same property, or
>
> (3) $(x)(y)((F)(Fx \leftrightarrow Fy) \leftrightarrow (x = y))$: both (1) and (2).

Although one will find different tags associated with different logical formulations, and there is some disagreement as to which formulation (1-3) Leibniz held, Leibniz's Law is generally associated with the indiscernibility of identicals, or (2), in the literature. Henceforth, then, I will refer to (2) as Leibniz' Law (LL). Further, the contrapositive of (LL) can be used to show that two objects are not identical:

> (4) $(x)(y)((F)((Fx \& \sim Fy) \vee (\sim Fx \& Fy)) \rightarrow (x \neq y))$: contrapositive of Leibniz's Law (CLL). That is, if there is some feature that differs between *x* and *y*, then *x* and *y* are not identical.

So, if any *x* or *y* differ with respect to any property, they are not numerically identical. We are now prepared to ascertain whether or not the relation between a statue and its compositional matter is one of numerical identity.

Take Michelangelo's *David*. Now, suppose that *David* is composed of a slab of marble (I actually do not know the physical make-up of *David*, but it could be marble) which I will call 'Slab'. The question before us is this: is Slab identical to *David*, that is, are Slab and *David* the same thing? The *prima facie* answer is, "yes". It looks like 'Slab' and '*David*' both refer to the same object, and so are the same thing. Nevertheless, if we can find some feature that differs between Slab and *David*, if we can find something that is true of Slab that is not also true of *David* (or *vice versa*), then we will be forced to conclude that Slab and *David* are not identical, by (CLL), and so are two different objects.

In fact, I think that Slab and *David* are not identical. I think this because there are things that are true of Slab that are not true of *David*, and *vice versa*. Suppose, for instance, that Michelangelo took the as yet unformed Slab and set it on his table at time t. Then, at t_1, Michelangelo shaped Slab in a particular fashion, and created *David*. It is true, then, that Slab existed at t, but *David* did not exist at t. Further, suppose at t_2 that a piece of *David* falls to the floor and is swept into a garbage bin, say, the right arm. It looks like *David* still exists, after all, this very thing happens to many statues but the identity of the statue itself continues through the change, e.g., the *Venus de Milo*; however, Slab no longer exists. Slab is a particular piece of marble, and cannot survive a loss, or likewise an addition, of such an extent. After the loss of the piece from Slab, we now have a different slab of marble, which we could call 'Slab*', but the same statue, *David*. It looks, then, like *David* and Slab have different persistence criteria, and so are different objects. But these differing features are temporally tainted, and some argue that identity is itself a

temporally relative notion, so I will offer some non-temporally relative features that differ between Slab and *David*.[3]

One such example concerns the different origins of Slab and *David*. It is true of *David* that it was created by Michelangelo, but this is not true of Slab. Slab was created by some complex geological process. One might argue, however, that this example sneaks temporally tainted concerns back into the picture. While I admit that I do not find temporally relative identity very satisfying, this example is consistent with such a picture. For we can simply stipulate that, under some very extraordinary conditions, Michelangelo was present at the "accelerated" creation of Slab, and that, simultaneous to Slab's creation, he fashioned *David*. With this stipulation, then, we can see that while both Slab and *David* were created at the same time, both came into being as a result of a different creative process, i.e., had different origins.

Slab and *David* also differ in terms of their modal properties. For example, if Slab were to be shot with a morphing ray such that it took on very different characteristics of shape, it would still exist; however, *David* would not survive such a change. It would appear, then, that by using (CLL) we can show that Slab and *David*, though they co-exist both spatially and temporally at *t*, are not identical. Instead, the relation that obtains between Slab and *David*, and Socrates and Socrates-seated, is constitution.

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[3]For example, I take it that George Myro is arguing for something like a temporally relative account of identity in "Identity and Time" in The Philosophical Grounds of Rationality, edited by Richard E. Grandy and Richard Wagner (New York, NY: Clarendon Press, 1986); reprinted in Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 148-174. Though I think any such qualification fails to capture identity, for Leibniz Law reasons, I will offer other differentiating features so as not to beg any questions here.

When one surveys the rather large contemporary literature concerning the peculiarities that arise between objects like Socrates and Socrates-seated, one finds a virtual cornucopia of stories about cats, ships, discs, and the like, that serve to motivate a similar concern to the one that Aristotle was addressing. On the face of it, Socrates and Socrates-seated, like the statue and the marble, are identical–numerically the same thing–but part of what concerned Aristotle, and what these other stories also serve to point out, is that there appear to be peculiar features of the objects that call into question the identity of the objects in fact. While there are quite a number of stories that give rise to the problem of material constitution in the literature–indeed, it seems that every philosopher must come up with his or her own original rendition–I make use of just a few of the more (in)famous examples in Chapter 2. Following Michael C. Rea, who has written several excellent essays on the issue at hand and has also collected some of the more important works into a reader dedicated to the subject, I address but three of the more prevalent accounts: the Ship of Theseus, Tibbles the Cat, and Lumpl and Goliath.[4] While I address all three to some extent, I focus on the first two, merely mentioning some of the more important issues related to the Lumpl-Goliath example toward the end of the chapter. After an extended treatment of the puzzles, I formally state the problem that each is said to raise, and briefly note some of the solutions that have been offered to resolve the puzzle before moving to dismiss them in favor of my preferred solution: namely, the doctrine of material constitution.

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[4] Cf., Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997c).

In Chapter 3 and Chapter 4, I address some of the more important proponents of material constitution in the recent literature–Frederick Doepke and Judith Jarvis Thomson in the third chapter and an extended treatment of Lynne Rudder Baker in the fourth. In each case, I provide an exposition of the view along with a critical appraisal. In particular, I show why each either fails to sufficiently articulate a complete, workable view, argue that the view leads to unacceptable consequences, or indicate why the view fails to take into account important, prevailing intuitions concerning the relations among objects; which, in turn, serves to taint the formal properties of that version of the constitution relation.

In Chapter 5, prior to offering my account of the constitution relation, I first address two recent, intrinsic theories on offer from Samuel Levey and Michael Rea. I argue that their views fail to provide a robust account of constitution and so are unable to explain all constitutionally relevant phenomena in the world. I then offer my account of constitution and take care to show how it differs from the other contemporary approaches, in particular the intrinsic ones, and show why it is preferable to them. I argue that it makes allowance for an object's extrinsic relations, that it is consistent with supervenience, and that it fully explains both the similarity and dissimilarity between constitutionally related objects. Finally, I explain how my version of the relation works relative to a paradigm case of a statue and its compositional matter, as well as some other cases in the social and religious realms.

In Chapter 6, I summarize what I have accomplished in the dissertation and offer cursory remarks concerning where one might go from here and specifically where

constitution might be helpful in resolving various philosophical puzzles. I indicate that my primary aim for the dissertation, however, was to motivate the need for the constitution relation, make room for an additional statement of the relation, and provide a robust account that possesses the requisite depth and breadth to cover the ubiquity of constitutionally related phenomena in the world.

Chapter 2

The Problem of Material Consitution

I. Chapter Intro

In "The Problem of Material Constitution", Michael Rea notes various puzzles that give rise to competing intuitions concerning the composition and identity of objects. He focuses on four, but I will highlight only three: the Ship of Theseus, an oft-used example when dealing with cross-time identity concerns; the Body-minus argument, most famously put forward by Peter Geach in his story about Tibbles the cat; and Allan Gibbard's puzzle centered around a statue, Goliath, and its lump of constituent matter, Lumpl.[1] While he admits that these puzzles have gained much attention of late, Rea claims that no one has taken the time to investigate how these puzzles are similar, and, if similar, how and why they are so closely related. Instead, they are simply taken to be dissimilar, and so are treated completely differently. Rea argues that not only are these puzzles similar, there is one meta-puzzle that underlies each of them–the problem of material constitution. Further, Rea thinks it underlies each of the four puzzles in the following way: "... every solution to the problem of material constitution is equally a solution to each of these four puzzles, though not vice versa".[2] If Rea is correct, what these stories suggest is that the

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[1]Michael C. Rea. "The Problem of Material Constitution", *The Philosophical Review* 104 no. 4 (Oct. 1995). Rea addresses a fourth puzzle, the Growing argument, as well, but it does not add anything novel to the issue at hand and so I will ignore it.

[2] [95]: 525.

problem of material constitution, if there is a genuine problem at all, is ubiquitous. The problem affects not only natural kinds, like persons and cats, but also artifacts, like ships and statues.

I follow, at least initially, Rea's treatment of the puzzles, his statement of the problem, and his taxonomy of possible solutions. Ultimately, I argue that two of the puzzles, the one centering on Tibbles the cat and the one centering on the statue Goliath, more clearly raise the issue at hand. The growing argument, which I do not address at all, adds nothing to the Tibbles puzzle while the Tibbles puzzle is far more common in the relevant literature and also clearly indicates what is at issue across a multitude of possible solutions. The Ship of Theseus puzzle, I argue, does not actually raise the problem, at least not as stated and developed by Rea.[3] Finally, while Rea's taxonomy of possible solutions is helpful, I only address certain elements of his taxonomy for reasons that I make clear later. Now, on to the puzzles.

II. The Ship of Theseus

The Ship of Theseus puzzle, used to tease out various philosophical conundrums, has a long and storied history within philosophy. While the puzzle has been used to address a number of different philosophical issues throughout its history, Thomas Hobbes is credited with first presenting the puzzle as it is discussed today.[4] Hobbes added a twist

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[3] In fn. 40, I offer an alternate statement of the puzzle–one that raises the problem of material constitution without muddying the waters with other concerns, as I think Rea's statement of the puzzle is prone to do.

[4] Rea [95]: 532. See also The English Works of Thomas Hobbes, vol. 1, "Concerning Body" ed. William Molesworth (England, John Bohn), pp. 135-138, cited in Rea [95]. The list of others who have made use of the puzzle, both historical and

to the story which sharpens certain troubling and counterintuitive features, some of which are relevant to our discussion. Indeed, Rea makes use of Hobbes' addition and I will note it as I present the story. The actual puzzle is familiar, and while certain license is generally taken in its exposition, the salient features remain largely the same across the literature.

The Ship of Theseus is a wooden ship with a long and legendary sailing career. As such, when Theseus is finished with sailing about the Grecian waterways, his ship is put in dry dock as a museum piece. Over time, of course, planks begin to fail and they are replaced with other wooden planks which, we will suppose, are qualitatively identical with the planks that they replace. We will further suppose that the planks that are replaced are set aside in a pile, and by some feat that goes contrary to the physical laws of erosion, these planks remain in roughly the same physical shape that they were in when they were taken from their original position. Over time (the exact amount of time is unimportant) we can imagine that the wooden vessel in dry dock has undergone a change in all of its planks, indeed all of its wooden parts. That is to say, that every single plank from the original Ship of Theseus, and all of the other original wooden fixtures (e.g., steering wheel, rudder, etc.) have been replaced by a new plank or wooden fixture. Again, this has not occurred all at once; rather, it has taken place over the course of a significant amount of time.

Now suppose that along comes a museum curator, perhaps one that is still bitter that her museum was not selected as the repository for the Ship of Theseus in the first place, and she stumbles upon the pile of replaced planks and fixtures and decides to put

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contemporary philosophers, is too long to include here.

them together again in their original, relative positions to create another ship out of the discarded parts to feature in her own museum. This feature, or one similar to it, is Hobbes addition to the story. Now, clearly the first ship, the ship that has entirely different planks (and fixtures) from the original planks (and fixtures) that the Ship of Theseus had when it was put into dry dock, has some claim to be the Ship of Theseus. But, as is equally clear, the new ship that has just been constructed (dare I say re-constructed?) out of all of the original planks and fixtures–again, kept in their original, respective positions–and so has the same planks (and fixtures) that the Ship of Theseus had when it was put into dry dock, also has claim to be the Ship of Theseus.[5] But of course both cannot be the Ship of Theseus, so the question becomes which of these two ships is identical with the original, i.e., which of these two ships is the Ship of Theseus?

Hobbes' twist focuses on the relationship between composition and identity. The two ships vying for the title of Theseus' ship at the end of the story highlight our counter intuitions concerning the essential nature of the original compositional materials of the original ship and the ship itself. Just as soon as we think that the ship can have a different composition, which might include a complete exchange of its parts, and yet remain the same ship–that is, that includes the possibility that all of the parts of the original ship could undergo change and yet the same ship remains–we end up with the continuously repaired

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[5] One must be attentive when using definite descriptions to refer to the objects in this puzzle lest the issue(s) raised by the puzzle be obscured by carelessness. Thus, I will refer to the first ship, the ship that has entirely different planks (and fixtures) from the original planks (and fixtures) that the Ship of Theseus had when it was put into dry dock, as either the continuously repaired ship or STR. Further, I will refer to the second ship, the ship that has the same planks (and fixtures) that the Ship of Theseus had when it was put into dry dock, as either the reassembled (reconstructed) ship or STO.

ship being the Ship of Theseus. But we have conflicting intuitions with regard to the level of part replacement that is allowed without altering identity. Rea calls this issue the *Principle of Alternative Compositional Possibilities* (PACP).[6] The principle itself simply affirms the possibility of alternative compositional states, which means that the loss of one plank, or the replacement of one plank, without a corresponding loss of identity would serve to entail the PACP. For the Ship of Theseus puzzle, the PACP has to be construed so as to allow for the complete exchange of the planks. We have a sense on the one hand that it can go that way–that is, that ships, and other such objects, can survive the complete replacement of their constituent parts–while, on the other hand, the counter intuition is to deny that particular interpretation of the PACP. This, in turn, pushes us in the direction of holding that the recently reassembled ship is in fact the Ship of Theseus. Thus, Hobbes' twist teases out the heart of the issue which is, as Rea presents it, whether or not we affirm or deny the most extreme version of the PACP. We have countering intuitions just on this issue and that is where and why the puzzle arises.[7]

The most common use of the Ship of Theseus puzzle in the literature is to use it to tease out intuitions concerning the problem of identity through time. In such cases, the puzzle is generally resolved in such a way as to emphasize continuity of matter over against continuity of form, or vice versa, depending on the prevailing intuition. But Rea argues that the real issue that is at the heart of the Ship of Theseus puzzle is instead how

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[6] Rea [95]: 528ff. See also Rea [97b]. I will address this principle, as well as the rest of Rea's statement of the problem of material constitution, shortly.

[7] See Rea [95]: 537, for more on this score.

the ship is related to its parts.[8] In other words, he thinks that the answer to the identity concern, whether to emphasize continuity of matter or continuity of form, is dependent on how one views the ship's relation to its parts. For example, if, on the one hand, one thinks that the ship cannot survive a change in its parts, then clearly continuity of matter is the emphasis. If, on the other hand, the ship can survive a change in parts (importantly, for the Ship of Theseus puzzle, all of its parts), then the continuity of form is the appropriate emphasis. In either case, the emphasis is dependent on the relationship of ship to parts.[9]

1. The Ship of Theseus and Material Constitution

Interestingly, however, Rea does not think that the Ship of Theseus story is primarily a puzzle about the relationship between the ship and the aggregate of planks; rather, the relationship in question, the one that is relevant to the problem of constitution, is that between the two ships–and not, I think, the two ships at the end of the puzzle. As we will soon see, Rea holds that the problem of material constitution arises when we consider two objects that share all the same parts and yet are related to those parts in different ways–one object is essentially related to the parts whereas the other is not.[10] Now, the two ships at the end of the story, the ship finally fully constituted by replacement planks and fixtures (STR) and the ship finally fully constituted by the original planks and

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[8]Rea [95]: 532.

[9]Rea [95]: 532. One wonders why the emphasis could not go the other way: namely, why emphasis on matter might not lead one to hold a particular view of the ship's relationship to its parts (one that denies PACP) and emphasis on form might not lead one to hold that the ship might survive a complete change in parts (affirmation of PACP). Rea does not address this issue.

[10]Rea [95]: 527.

fixtures (STO), are *prima facie* obvious contenders for the objects in question. However, since Rea construes the problem of material constitution in the way that he does, this will not work, for STR and STO do not share any parts at the end of the story and, further, there is no reason to think that they might not be similarly related to their parts.[11]

We have seen, now, one of the essential components that Rea thinks must hold for any situation that raises the problem of material constitution. In order for the problem to arise, there must be two objects present that share all of their parts and yet are differently related to their parts–one essentially and one non-essentially. He further thinks that any philosophical puzzle which raises the issue will make five general assumptions. We have already seen one of the five assumptions, the PACP. Rea thinks that this assumption, along with what he calls the existence assumption and the essentialist assumption, are responsible for the problem being raised.[12] The *existence assumption* is straightforward: there is an F and there are ps that compose it.[13] In other words, this assumption supposes

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[11] I will address this concern, and Rea's response, later. Prior to doing so, it is necessary to more fully explicate Rea's understanding of the problem of material constitution.

[12] Rea [97b]: xxi. While I do not fully understand Rea's point here, since the problem is not finally raised until some formal contradiction, which relies on the other two assumptions (identity and necessity) according to him, comes to the fore, he appears to mean that the first three assumptions serve to raise our counter intuitions. Of course, strictly speaking, our counter intuitions are not raised without the identity assumption–at least not in the Ship of Theseus puzzle. In any event, the epistemic quandary that arises out of the first three assumptions is not sufficient to generate the problem of material constitution as it is normally stated, and Rea appears to embrace this later (cf. [97b]: xxiff).

[13] "F" stands in for sortal or kind terms, so dogs, cats, trees, etc. The "ps" stands for those things that are said to compose some object. One can think of particles, cellulose molecules, wood planks, etc., here. "R" stands in for relations such as "is

the existence of at least one object. The *essentialist assumption* is related to the existence assumption such that the ps that compose the F compose an object which essentially bears R to its parts. In other words, it supposes that whenever there is at least one object of the kind found in the existence assumption, there is an object which essentially bears the relation R to its parts. Concerning the essentialist assumption, the relation R for the relevant puzzle is of extreme importance to determine whether or not the puzzle does make an essentialist assumption. Rea is not suggesting that there is an essentialist assumption that holds true for all of the puzzles, because for each puzzle the relevant relation R may be different, though it would remain the same throughout the assumptions for that puzzle. The essentialist assumption is in obvious tension with the PACP which holds that given some F composed by the ps, the ps compose an object that can exist and not bear R to its parts.

The remaining two assumptions, the identity assumption and the necessity assumption, generate the contradiction that is found in every puzzle that raises the problem of material constitution. Rea's statement of the *identity assumption* borders on the Principle of Mereological Extensionality and only differs insofar as its antecedent is

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composed by" or "is at all times composed by", etc. It is important to note that each of these are understood to be story relative, including the relations. This is sometimes very important for Rea's discussion, though it will not be important for our discussion here. For Rea's account of these terms, the five assumptions (both formally and informally), and his statement of the problem of material constitution, see [95]: 526-528, or [97b]: xx-xxvii. In what follows, I will stick closely to Rea's informal account and will only make use of formal statements where the argument, or my critique, turns on formal concerns.

temporally indexed.[14] In other words, for all objects, if any two share all of the same parts at the same time, then they are identical (they are the same F), according to the identity assumption. The *necessity assumption* simply adds the modal quantifier ranging over the consequent, so if any two objects are identical, then necessarily they are identical. Both of these assumptions will come into question a bit later.

It is best to see how these assumptions, when taken together, lead to contradiction and so raise the problem of material constitution by looking at a specific puzzle, like the Ship of Theseus. That the Ship of Theseus makes the existence assumption is obvious. If there are no ships and no ps, or planks and fixtures, that compose ships, there is no puzzle at all. The essentialist assumption in the puzzle is not surprisingly tied closely to the PACP. Both are at the heart of the Ship of Theseus puzzle. If we affirm the PACP, then it looks like the STR should be the obvious choice for being the Ship of Theseus. With the most radical version of the PACP, there is no reason to think that the ship has to contain any of the original parts, and since the STR is the one that is continuously related to the Ship of Theseus, it ought to be the obvious choice for claims of identity with the original ship, and this is precisely why we tend to have an intuition that the STR is,

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[14] Following Peter Simons Parts: A Study in Ontology (Oxford, England: Clarendon Press, 1987), this principle holds that "if individuals have the same [proper] parts, they are identical" so long as they are not atoms (28). See also Mark Johnston "Constitution Is Not Identity" *Mind* 101 (1992): 89-105; reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 44-62., and Rea [97b]: liii, fn. 16, and Judith Jarvis Thomson "The Statue and the Clay", *Noûs* 32 (1998): pp. 149-173. Rea does not make Simons' distinction between parts and proper parts. In addition, while the antecedent is temporally indexed the consequent is not. In other words, if there is any time when x and y have all of their parts in common, then they are identical at every time ([97b]: xlix).

potentially, at the very least, the Ship of Theseus. But when our intuitions go contrary and suggest that the newly rebuilt ship, the STO, is the Ship of Theseus, we deny the PACP and affirm something like the essentialist assumption. Here the essentialist assumption would not be so much that the original collection of planks is essential to the existence of the ship, for if that were the case, then the loss of any one plank or the replacement of any one plank, would entail that the STO was not the Ship of Theseus.[15] However, if one denies the PACP and thinks that the STO is the Ship of Theseus, it does look like one is committed to the fact that there is at least some portion of the original collection of planks–maybe an important functional part, maybe just a sense of the rough proportional percentage of the original planks still present, etc.–that is essential in order for the Ship of Theseus to be present. In any event, it is clear that, once we have replaced all of the planks, the STR is not identical with the Ship of Theseus and the STO is identical. This is clear because, since the STO has all of the original planks, it certainly has the relevant *portion* of original planks that are required in order for the Ship of Theseus to be present. Once we deny the PACP, thereby affirming something like an essentialist assumption, the STO is clearly the only ship at the end of the story that has any claim to identity with the original ship.[16]

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[15] Indeed, it would entail that neither of the two ships is identical to the Ship of Theseus.

[16] There may be another option here, contra Rea. One can affirm PACP, thereby denying the essentialist assumption, and still think that the recently rebuilt ship (STO) has a strong claim to being the Ship of Theseus. For if all of the original planks are there present under different circumstances, e.g., where there is not a continuously rebuilt ship, the STO would clearly be the Ship of Theseus. If one were to disassemble the original ship, not replace any planks just simply disassemble it, and then at some future time, say,

That the Ship of Theseus puzzle makes the identity and necessity assumptions is likewise obvious to Rea.[17] First, there is an assumption at the beginning of the story that there is but one ship composed by the collection of planks, and it is integral to the puzzle toward the end of the story that there is *the* ship that is the Ship of Theseus. There are two contenders for that title: one of which is *that* ship (i.e., the Ship of Theseus) and the other of which is a different ship. Now, were there more than one ship present at the story's beginning, which would be allowed were the identity assumption *not* assumed, then our counter intuitions concerning which ship at the end of the puzzle is identical with the earlier ship would be unmotivated for there would be no *the* Ship of Theseus and so no ship at the end of the story could be identical with *it*. In addition, the puzzle assumes cross time identity. Unless there is identity across time, it makes no sense to be concerned about *the* Ship of Theseus. If there is no identity across time, then neither of the two ships

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10 years hence, reassemble it, the reassembled ship would be the Ship of Theseus. If such is the case in our counterfactual scenario, the same should hold in the current case. If not, one needs to give an account of why the addition of another ship, the STR, makes the difference in terms of identity between STO and the Ship of Theseus.

Apparently this critique was also noted by an anonymous referee for Rea's paper. Rea notes the critique ([95]: 534 fn. 21) and offers a reply. On his view, the route taken in the counterfactual scenario is akin to endorsing an essentialist assumption and denying the PACP, with the following troubling implication. Namely, that when the STO is being rebuilt, what one has, say, half way down the line when half of the planks are reassembled and half are yet in a pile, is one "vessel" where one half of it is the original Ship of Theseus–what remains–and the other half is the making of a new ship, so you really have two incomplete ships for the one "vessel", which is counterintuitive in the extreme. At least this is Rea's position.

[17] Obvious to Rea, but by no means obvious to all. Indeed, I argue that it is not clear that Rea is consistent on this point as he sets out the problem of material constitution that is raised by the Ship of Theseus. See below.

at the end of the puzzle is the Ship of Theseus–that ship ceased to exist long ago. Thus, to reject the identity assumption is to make the puzzle moot.[18]

The necessity assumption is also made by the Ship of Theseus puzzle. For if the necessity assumption is not made, then it is possible that the Ship of Theseus be identical with something at the beginning of the story that either *could* or *could not* survive part replacement but is no longer identical with that thing.[19] In which case, the confusion at the end of the puzzle does not arise. Rea agrees.[20] He holds that to deny the necessity assumption here is to embrace temporary identity, given the other four assumptions. He does recognize that a denial of the necessity assumption does not by itself entail temporary identity. For example, Allan Gibbard endorses contingent identity and four-dimensionalism[21], and four dimensionalism is a special case for Rea's account. On a four-

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[18] At least this is Rea's position, Cf. Rea [95]: 535 and Rea [97b]: xxvii. On my view, the puzzle is only moot if we think that the co-location that Rea is worried about involves the same kinds, in this case ships. There is no problem if the co-located objects are different kinds. See Wiggins "On Being in the Same Place at the Same Time" *The Philosophical Review* 77 (1968): pp. 90-95; reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 3-9, for more on the issue of whether or not co-location entails difference in kind or sameness in kind.

[19] The claim here regards the modal difference with respect to relation to constituent parts–namely, an object, A, that is essentially related to its parts and one, B, that is not essentially related to its parts–and whether or not some object x can be identical to A but possibly not essentially related to its parts (cf. [97b]: xxii).

[20] Cf. [95]: 536.

[21] See Allan Gibbard "Contingent Identity" *Journal of Philosophical Logic* 4 (1975): pp. 187-221; reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 93-125.

dimensionalist account, the PACP, as Rea defines it, is false, and this means that the four-dimensionalist is not committed to temporary identity.[22] So in the present context, Rea thinks that to deny the necessity assumption, and to affirm the other four, commits one to temporary identity. Further, once one is committed to temporary identity, then there is no reason to think that the recently reassembled ship is the Ship of Theseus.[23]

2. Problems with the Ship of Theseus

Even with the foregoing assumptions made, however, we still need a further element in order for the puzzle to clearly raise the problem of material constitution, and it is here that Rea's account founders. Recall that Rea holds that the problem of material constitution arises when we consider two objects that share all the same parts and yet are related to those parts in different ways–one object is essentially related to the parts whereas the other is not. In other words, in order for the problem to be raised at all, there must be an *a* and a *b* such that they share all of their parts at some time, t, and yet essentially bear different relations to those parts (or portions of those parts, in this case). But what are the relevant objects in question, what are the relevant *a* and *b*?

On a quick reading, the relevant *a* and *b* might appear to be the two ships at the end of the story: STR and STO. But as I have already stated, these two ships cannot possibly fit the bill since they do not share all of the same parts. In fact, at the end of the story, the ship in dry dock has a collection of planks and fixtures that is wholly distinct from the collection of planks and fixtures that composes the newly (re)formed ship, STO,

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[22] Rea [95]: 545ff, especially fn. 22.

[23] Strictly speaking, my point is different than Rea's here.

so they do not share *any* of the same parts. One could argue that STO shares all of its parts with STR since STR had as parts (at one time) all of the parts that STO now has. However, while this might be true on certain renditions of the puzzle[24], this would not resolve the concern because STR would still fail to share all of its parts with STO and, even if it did somehow, the requirement is that the two objects have all their parts in common *at the same time*. Clearly, the two ships at the story's end fail this requirement.

Rea agrees that the relevant *a* and *b* cannot be the recently reconstructed ship and the continuously repaired ship, since they do not share all of the same parts, but he further thinks that it is difficult to see how the *a* and *b* could be either the recently reconstructed ship and the original ship, or the continuously repaired ship and the original ship. For it would appear that our intuitions are pushing us in the direction of determining which of the two, the recently reconstructed or the continuously repaired ship, is identical with the original ship. And if identity is what explains their relationship, then, again, we are not dealing with the problem of material constitution. For, if this were the case–that is, if *a* and *b* were identical–the objects would not be distinct and so their relationship would not

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[24]Though not all construals of the puzzle. For example, if we view the STO to have ceased to be at the change of a particular plank, like, the first plank, and then come back into being when it is returned to its original form and composition, then it has never had any of the parts that now compose the STR. Or if we think that the original ship goes out of being at some point, say the middle point, in the replacement of planks, and now comes back into being, it does not share at least some of its planks and fixtures with the STR–unless we think *that* ship, the STO, existed prior to it being put back together. In such a case we would have two ships existing at the same time and place as the STR, and then suddenly the STR and the STO would change spatial locations–i.e., the STO would get instantiated at a different location with wholly different parts from time t to t1. Of course, none of these construals is without its own set of problems and will not, ultimately, aid Rea's version of the Ship of Theseus puzzle.

be in further need of explanation. Hence, the problem of material constitution–namely, that two objects share all and only the same parts and yet are somehow distinct–would not arise.[25]

Instead, Rea considers the possibility that the relevant *a* and *b* are both found at the beginning of the story along with the original ship. The one, *a*, would refer to the ship that can survive complete part replacement, which is the ship that ultimately results in the continuously repaired ship later in the story and pushes our intuitions in the direction of claiming that the STR is the Ship of Theseus. The other, *b*, would refer to the ship that cannot survive complete part replacement, which, of course, pushes our intuitions in the direction of denying that the continuously repaired ship is the Ship of Theseus and affirming that the recently reconstructed ship, or STO, is the Ship of Theseus. Rea thinks that these two objects exist at the beginning of the story and are the relevant *a* and *b* under consideration–their parts, at that time, being shared.[26] As the Ship of Theseus begins its journey, these two ships–one of which is identical with the Ship of Theseus while the other is not–have all their parts in common. One, however, is essentially related to its parts, or at least a proper subpart of its parts, while the other is not.

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[25] Rea [97b]: xix. Add to this, too, the temporal restriction highlighted earlier. Rea does not account for this issue probably because of the ambiguity centering around "at the same time". He addresses this ambiguity when considering the doctrine of temporal parts, but not until later in the essay. It is clear, then, that his view concerning the ambiguity coincides with my own and so, from his perspective, the temporal qualification critique is valid.

[26] Hints of this view can be found in his earlier essay, but Rea makes his position much clearer in the "Introduction" to his reader. There can be no doubt that on Rea's construal of the Ship of Theseus puzzle, if the problem of material constitution is raised at all, both ships, *a* and *b*, must be present at the beginning. See especially [97b]: xix-xx.

There are some problems, however, with Rea's proposed reading of the Ship of Theseus puzzle. It seems to me that it is far easier for us to think of object *a* and *b* when they are of different kinds, e.g., the collection of planks and the ship, the lump of clay and the statue, the collection of particles and the person, etc.. It is much more difficult, indeed counterintuitive, to claim that in the Ship of Theseus puzzle there are two ships that exist from the very beginning. The only way one could assume that there are two ships that exist at the beginning[27], it seems to me, is to affirm something like the doctrine of material constitution: namely, that two objects can be spatially co-located at the same time.

But more than that, one must also affirm that two objects of the same kind can be co-located in space and time. But this is just to deny David Wiggins' time-honored S* principle: no two objects *of the same kind* can occupy the same space at the same time.[28] While detractors yet remain of the material constitution relation when it is affirmed of multiple objects of different kinds, that number grows exponentially, and includes many proponents of the relation, like Wiggins, when it is claimed of multiple objects of similar kinds. To claim there are multiple spatio-temporally coincident objects remains counter intuitive in its own right. But to further claim that there are multiple spatio-temporally coincident ships or statues or cups, whatever, takes a further step in the direction of

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[27] There may be three ships present: the one that is nonessentially related to its parts, the one that is essentially related to its parts, and the Ship of Theseus. At this point, we have insufficient justification to suppose that the Ship of Theseus must be identical with one of the other two. Of course, depending on how the puzzle is resolved, the Ship of Theseus may just be identical with one of the other two. However, if neither of the two are identical to the Ship of Theseus, then Theseus' ship must be a third ship present at the beginning.

[28] [68]: 5.

wanton metaphysical whimsy. There are a host of problems associated with the thesis that at least two mugs–perhaps an infinite number!–exist on the desk where my mug now sits, and there are few proponents of material constitution who wish to defend that view. A defense is what is needed, however, if one wishes to forward such a radical thesis, and as far as I can tell Rea does not offer one.

Not only, then, must one assume some version of material constitution in order to justify that the Ship of Theseus puzzle is a puzzle about material constitution, which appears to get the cart in front of its horse, one has to assume a particularly strong version of material constitution where not only can two objects occupy the same space-time, but two objects of the *same kind* can occupy the same space at the same time, which most proponents of material constitution deny.[29] Both of these problems seem insuperable on their face.

Rea admits that we have strong intuitions to identify what he would call ship *a* and ship *b* but he thinks that in order to do so–and I think he is correct here–we must assign

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[29] For example: David Wiggins, [68] and Sameness and Substance. (Oxford: Basil Blackwell Pub., 1980); Lynne Rudder Baker Persons and Bodies: A Constitution View. (Cambridge, England: Cambridge University Press, 2000), "Unity without Identity: A New Look at Material Constitution" *Midwest Studies in Philosophy, XXIII* (1999): pp. 145-165, "Why Constitution is not Identity" *Journal of Philosophy* 94 (1997): 599-621 (though there is some ambiguity here); Judith Jarvis Thomson "Parthood and Identity Across Time" *Journal of Philosophy* 80 (1983): 201-220; reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 25-43, "The Statue and the Clay", *Noûs* 32 (1998): pp. 149-173; Mark Johnston "Constitution Is Not Identity" *Mind* 101 (1992): 89-105; reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 44-62; Samuel Levey "Coincidence and Principles of Composition" *Analysis* 57(1) (Jan. 1997): pp. 1-10; Michael Burke "Copper Statues and Pieces of Copper: A Challenge to the Standard Account" *Analysis* 52 (1992): pp. 12-17, (Oxford, England; Basil Blackwell, Ltd), etc..

either the persistence conditions of *a* or the persistence conditions of *b*. It must be the case that either the persistence conditions of *a* obtain or the persistence conditions of *b* obtain–at the beginning of the story–but not both.[30] The result would be to identify *a* and *b* and then identify *that* ship with the Ship of Theseus, but then the puzzle would once again look like a puzzle about identity across time.

Rea, however, urges that the fact that we cannot determine or choose which of the two ships is the Ship of Theseus at the end of the story, the recently reconstructed ship or the continuously repaired ship, testifies, as he puts it, "to the difficulty of making this assignment" at the beginning of the story.[31] From this he concludes that "there are really two ships at the beginning of the story that share all of the same parts without being identical".[32] I agree in part, but the fact that it is difficult to assign which ship is the Ship of Theseus at the end of the story does not bear on the question of whether or not it is the case that there is but one set of persistence criteria at the beginning of the story, and so but one ship present then and there. That we are confused as to which ship is the Ship of Theseus at the end of the puzzle I do not deny, but this should not lead us to think that there are in fact two different objects with different persistence criteria at the beginning of the puzzle–at the very least it does not by itself warrant such an inference. From our confusion at the end of the puzzle we can draw no clear conclusion for the beginning of

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[30] [97b]: xix-xx. But this is true only if the indeterminacy/vagueness is rooted in the objects themselves and not in our understanding of the "objects" and their relations.

[31] Rea [97b]: xx.

[32] Rea [97b]: xx.

the puzzle; we can only draw the conclusion that we are confused at the end of the puzzle. To do anything further based on that bit of justification alone is to confuse our epistemic condition at the end of the puzzle with the state of the metaphysical landscape at the beginning of the puzzle.

There is a second major problem with Rea's account of the Ship of Theseus puzzle. When he toys with rejecting the necessity assumption, he also goes awry. He thinks that a rejection of the necessity assumption entails temporary identity, which can ultimately be used to dissolve the problem of material constitution since the problem does not arise if temporary identity holds.[33] This is the case because once the necessity assumption is denied we are in a position to identify the relevant *a* and *b*, what he calls ship *a* and ship *b* (ship *a* being the one that bears R essentially to its parts[34] and ship *b* being the one that fails to bear R essentially to its parts). The one affirms the essentialist assumption the other affirms PACP. So Rea thinks that when one denies the necessity assumption, one is free to affirm that ship *a* and ship *b* are identical at the beginning of the story but are not identical at the end of the story–one ship has undergone complete part replacement, that is the continuously repaired ship, and the other ship has not undergone any part replacement, that is the recently reconstructed ship. But if this is true, then there is no puzzle concerning how ship *a* and ship *b* are related at the beginning of the story; they are identical.

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[33] [97b]: xxvii.

[34] Strictly speaking, this should reference at least a portion of its parts, which is a weaker assumption. The stronger assumption is unnecessary and almost certainly false.

I do not think that this line of argument is open to one who rejects the necessity assumption. Rea asserts that ship *a* and ship *b* are identical at the beginning of the story, but this is not possible for they do not share all of their properties. One has the property of essentially bearing R to its parts, and the other has the property of not essentially bearing R to its parts (or simply fails to have the earlier property–depending on whether or not there are negative properties). But far from creating a problem only once the two ships that exist at the end of the story are generated, this creates a problem for Rea's treatment at the beginning of the story. If the two ships are identical, then, by Leibniz' Law, they must share all of the same properties. By the contrapositive of Leibniz' Law, if they do not share all of the same properties, then they are not identical. But, *ex hypothesi*, ship *a* and ship *b* **do not** share all of the same properties–they differ with respect to their relation to their parts. So either it is the case that the original Ship of Theseus both has the property of bearing R essentially to its parts and fails to have the property of bearing R essentially to its parts–a nifty contradiction–or ship *a* and ship *b* are not identical, and indeed cannot be identical, as Rea supposes.[35]

Rea commits a *mea culpa*[36] when he grants that the competing intuitions regarding the original ship is the point of the puzzle, and recognizes that if pushed, he would have to agree that both ship *a* and ship *b*, STO and STR, still have equal claim to identity with the

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[35]There is another option. It could be the case that one of the ships, the most likely candidate is ship *a* or STO, simply did not exist at the beginning of the story and first came into existence when it was constructed in dry dock. This response, however, is not available to Rea and so will not be discussed here.

[36] Cf. [97b]: fn 19.

original ship and our intuitions of the same. He thinks that in order to resolve this tension we need to get clear on what the essential properties of the two ships are and to identify the Ship of Theseus with the "object" that has the essential properties of a ship.[37] The moral Rea draws from this is simply that any puzzle which leads to the problem of material constitution and either fails to have an *a* and a *b* that are of known, well defined kinds, or is unclear concerning the essential properties associated with each object, will be difficult to resolve. But one wonders why Rea does not go further when drawing his moral. One might just as easily say that unless and until such puzzles, including the Ship of Theseus puzzle, can be shown to have an *a* and a *b* with a known, well defined kind or where the *a* and the *b* are objects whose essential properties are clear, one cannot say whether or not the puzzle justifiably raises the problem of material constitution. Of course, Rea does not want to draw this conclusion, but it is unclear what warrants his failure to do so.

Rea claims that once he has shown how an affirmation of temporary identity resolves the issue of material constitution, then the continuously repaired ship is the forerunner for identification with the original ship.[38] However, I fail to see how he can do this in a nonquestion-begging way. Importantly, to support his view, he notes that when the puzzle is presented, the intuition is pushed regarding the original ship that it can undergo a complete replacement of its parts.[39] But of course, if ship *a* and ship *b* are identical, then there is the counter intuition that the ship cannot undergo a complete

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[37] [95]: 534.

[38] [97b]: xxvii.

[39] [97b]: xxvii.

replacement of its parts. Rea claims that the counter intuition arises only at the end of the story when we are confronted with the recently reconstructed ship. However, given how Rea has construed the Ship of Theseus puzzle to fit his paradigm, the relevant *a* and *b* must be ship *a* and ship *b*, which, on his view, are both present at the beginning of the story. So I fail to see how Rea can get away from the fact that these intuitions are present from the very beginning. Others concerned with the Ship of Theseus puzzle may be open to using this line of argument, but I do not see how it is open to Rea.

Furthermore, even if one were to give Rea license to make this kind of argument, one must question why he is justified in giving priority to intuitions which are epistemically evident prior to when the counter intuitions are evident. Rea thinks that temporary identity relieves the intuitive pressure that we gain at the end of the story to think that the original ship must not be able to undergo complete part replacement. And since we were previously intuitively inclined to hold that the original ship could survive complete part replacement, we should stick with that intuition unless there are compelling reasons, or intuitions, to the contrary. But this looks to me to decide the issue based on temporal priority of intuition, which is itself determined by presentation of the story. Of course our intuitions are first to the effect that the ship can undergo complete part replacement, that is precisely how the story is setup. It should not be surprising, then, that our intuitions go in the order that they do. Even if Rea can wiggle out of this conundrum, however, he still has to answer the earlier questions that I raised: namely, if he presents the puzzle in the way he needs to, then the original ship also has the added property of being essentially

related to its parts in such a way that it could not undergo complete part replacement (or vice versa, either way it is a big problem for Rea).

While there are puzzles that raise the problem of material constitution, the Ship of Theseus puzzle, at least as Rea has developed it, simply is not one of them.[40] It is to one of the other puzzles that we now turn.

III. Tibbles the Cat

The Tibbles-Tib puzzle is a familiar one.[41] I cull my own formulation from versions forwarded by David Wiggins, Peter van Inwagen, and Peter Geach.[42] We may suppose that Tibbles the cat is luxuriating on the mat at some time t. There is also, at the same time, an object on the mat that is all of Tibbles save for Tibbles' tail. Call it Tib. Now, consider some later time t* when the unthinkable occurs, Tibbles loses his tail. (We may suppose that the tail is annihilated so as to remove certain worries from arising later.)

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[40] Following Frederick Doepke "Spatially Coinciding Objects" *Ratio* 24 (1982): pp. 45-60; reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 10-24, the Ship of Theseus puzzle can raise the problem of material constitution if the puzzle is understood as one which deals with the relationship between the ship and the collection of planks and fixtures that composes the ship. On such a construal, one need not raise issues relating to temporality at all. Of course, this is neither the standard treatment of the Ship of Theseus puzzle nor the construal that Rea favors.

[41] Also known as the Body-minus puzzle (Rea [97b]) or Descartes-minus (Van Inwagen "The Doctrine of Arbitrary Undetached Parts" *Pacific Philosophical Quarterly* 62 (1981): pp. 123-137; reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 191-208).

[42] Cf. [68], [81], and "Reference and Generality (Selections)" in Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 305-312, respectively.

Tib, of course, is unaffected since Tib did not include the tail as a part to begin with. So the thing that at time t is Tib is identical to the thing that at time t* is Tib. Further, the thing that at t is Tibbles is identical to the thing that at t* is Tibbles. In addition, it looks like the thing that at t* is Tib is identical to the thing that at t* is Tibbles. By the transitivity of identity, then, the thing that at t is Tib is identical to the thing that at t is Tibbles. However, since Tibbles had properties at t that Tib did not have–namely, having a tail–the thing that at t is Tib is not identical to the thing that at t is Tibbles. Of course, these latter statements–attributing identity and nonidentity to Tibbles and Tib–cannot both be true, since they contradict one another, yet both seem justified by the story. We have a problem.

As with the Ship of Theseus, the Tibbles-Tib story assumes certain things in order to generate the puzzle. For example, three dimensional, enduring objects–as opposed to four dimensional, perduring objects–exist.[43] These are objects like tables, trees, and cats. Such material objects can survive the replacement of parts and the proper parts of such material objects exist even though they are undetached from those material objects, e.g., Tib. There are certain assumptions made regarding the nature of identity as well: namely, identity is transitive and neither sortal-relative nor temporal-relative. Finally, something

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[43] Enduring objects persist through time and are wholly present at every time at which they exist. Perduring objects persist through time in the following way: they are partially present at each temporal moment in terms of different spatio-temporal parts being present at each particular time. The object itself is a collection of these spatio-temporal parts. Perduring objects are, then, extended through time as well as space, so they are four dimensional objects. Thus it is clear that this assumption is necessary in order for there to be a problem with Tibbles being identical with Tib. Otherwise, the claim that Tibbles and Tib are identical would be obviously false because Tibbles and Tib clearly have different (temporal) parts.

like an anti-coincidence thesis is assumed: distinct material objects cannot fully occupy all and only the same place at the same time.[44]

Something must be done to resolve the contradiction that arises in the context of the story, and this list of assumptions provides a comprehensive road map to possible solutions to the problem generated by the puzzle because denying any one or a number of these assumptions makes it impossible for the troubling contradiction to arise.[45] A denial of each of the assumptions has been championed by some philosopher at one time or another. Peter Unger, for example, has argued against the existence of garden-variety, everyday material objects.[46] Peter van Inwagen has argued against the notion of physical objects such as Tib.[47] Roderick Chisholm denies that any physical objects can undergo a loss of parts.[48] And there are several who deny either that identity is transitive or who

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[44] Cf. [95]: 539.

[45] Rea argues that it is comprehensive, though not exhaustive, because there are ways of solving the Tibbles-Tib puzzle, in particular, that do not reject any of the foregoing assumptions, e.g., Michael Burke's novel solution [cf. Rea [95]: 539, fn 30, and Michael Burke "Dion and Theon: An Essentialist Solution to an Ancient Puzzle", *Journal of Philosophy* 91 (1994a): pp. 129-139.]

[46] Peter Unger, "I Do Not Exist" Perception and Identity, edited by G. F. MacDonald (London, England: The MacMillan Press, 1979); reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 175-190. Peter van Inwagen argues in a similar vein, though he allows for the existence of living things including persons [Material Beings (Ithaca, NY: Cornell University Press, 1990b)].

[47] Van Inwagen [90b].

[48] Chisholm, "Identity through Time", Chapter 3in Person and Object, (La Salle, IL: Open Court Publishing, Co., 1979); reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 209-235.

urge that identity is relative either to sort or time.[49] Finally, there are those who affirm that distinct physical objects can occupy exactly the same space at the same time.[50] On the face of it, none of the foregoing seems promising, yet one will have to give in order to resolve the contradiction. I will briefly address each proposed solution in turn with an eye toward finding the most plausible alternative. Ultimately, I will side with those who affirm the coincidence of objects and will provide my own account of said coincidence, but such a treatment will be made in subsequent chapters.

Peter Unger would dissolve the problem before it even got started by denying the existence of garden-variety objects like cats.[51] He first argues that Tables do not exist, but his argument generalizes to cats (and even people). First, he establishes the current scientific picture of tables as collections of atomic entities. This is not essential to his argument. A collection of wood fibers or wood chips will do just as well. He then performs a sorites of decomposition:

(1) Suppose a particular table exists.

(2) For all x, if x is a table, then x consists of many, but a finite number, of atoms.

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[49] Geach [80]; John Perry, "The Importance of Being Identical", in The Identities of Persons, Amelie Oksenberg; Myro [86]; etc.

[50] Wiggins [68] and [80]; Thomson [83]; Doepke [82] and "The Trees of Constitution" *Philosophical Studies* 49 (May 1986): pp. 385-392; Baker [2000], [99], and [97]; etc.

[51] Unger [79]: 176.

(3) For all x, if x is a table, the net removal of one atom, or only a few, in a way which is most innocuous and favorable, will not mean the difference as to whether there is a table then and there.[52]

But, if the above three premises are true, then, Unger thinks, one is committed to the obviously false claim that a collection consisting of no atoms is a table.

At least one of (1)-(3) must go, and Unger thinks that (1) is the obvious, if counterintuitive, choice. Unger admits to the "airy-fairy" feel of the argument, but retreats to platitudes of logic in his defense. If commonsense and logic conflict, so much the worse for commonsense. But there are questions worth asking of Unger's argument that do not deal with matters of formal logic. For example, one need not be committed to his obviously false conclusion if one either gives up (3) or offers a more complex picture of the metaphysical situation for objects, like tables, that (3) scopes.

First, "innocuous and favorable" removal seems easy enough early on, but after, say, 1/3 of the collection has been removed, it becomes less clear how to remove further atoms in an innocuous and favorable way. Indeed, one has strong intuitions that such a restriction will have been violated long before the collection is down to the last atom. Of course, Unger thinks that such an argument commits one to a precise point, a precise atom or few atoms, that makes *the* difference between a table's being there and not being there, which, he asserts, is to expect a miracle. But this seems no more "miraculous" than his conclusion that tables, and even he, himself, fails to exist. One need not know of a precise point for there to be one.

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[52] Unger [79]: 177-178.

Moreover, one need not necessarily be committed to a precise point–tables may just be vague objects. To say that tables are vague objects, however, appears to be consistent with (3). The problem, then, is not with (3), *per se*, but with when to apply it. For, if tables are vague objects, there will come a time during Unger's process of removing atoms when the appropriateness of affirming the antecedent in (3) is indeterminate, because it will be indeterminate whether or not there is a table there and then. Of course, following this grey stage, at some point one fully expects that it will be clear that there is not a table present. Thus, whether (3) turns out to be false or is true but also consistent with the loss of the table during some stretch of atom removals, we need not follow Unger to his unpalatable conclusion.

Unger's denial of the existence of garden-variety objects, then, is not the way to go. There are unresolved questions surrounding the third premise of his argument. Epistemic or metaphysical vagueness is a more appealing option. And, finally, the old stand by. If the conclusion of an argument is that the person forwarding the argument does not exist, there must be *something* wrong with the argument!

Similarly to Unger, Peter van Inwagen elsewhere denies the existence of many garden-variety objects, except, most notably, humans[53], but in this context he resolves the Tibbles-Tib dilemma by denying the existence of objects like Tib.[54]

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[53] Van Inwagen [90b]. Actually, Van Inwagen denies the existence of Tibbles as well as Tib, which is why his version of the story refers to humans (and their parts), which do exist, rather than cats (and their parts), which do not.

[54] Van Inwagen [81]. I say "like Tib" because, again, Van Inwagen is concerned with humans, not cats.

Using an argument that is quite similar to the one under discussion here, but referring to Descartes and Descartes-minus[55], he establishes the truth of four propositions on the assumption that D-minus exists:

(1) The thing that was D-minus before t = the thing that was D-minus after t.

(2) The thing that was D-minus after t = the thing that was Descartes after t.

(3) The thing that was Descartes after t = the thing that was Descartes before t.

(4) The thing that was D-minus before t ≠ the thing that was Descartes before t.[56]

Of course, proposition (4) violates the transitivity of identity, which van Inwagen affirms. Thus, he takes the argument to be a reductio of the Doctrine of Arbitrary Undetached Parts (DAUP); the doctrine that allows for the existence of D-minus or, in our example, Tib.

While van Inwagen's argument is interesting, I do not think that it necessarily shows what he wants it to show. Why? Because, even assuming that D-minus exists, proposition 2 is false.[57] But Van Inwagen needs proposition 2 in order for 4 to violate the

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[55] For our purposes, D-minus is Descartes minus his left leg. Consider Descartes loping along an ill-used trail during the war at some time t. Both Descartes and D-minus exist at t. At t*, Descartes happens upon the 17th century equivalent of a land mine and his left leg is obliterated. As with Tibbles-Tib, nasty metaphysical problems arise with the obliteration of Descartes' left leg.

[56] Van Inwagen [81]: 195.

[57] I will show this throughout the course of the dissertation. Suffice for now to say that there are other reasons to think that proposition 2 is false. But if proposition 2 could be false for some other reason, then proposition 4 need not violate the transitivity of

transitivity of identity. Hence, his *reductio* fails. But this result seems correct. It does appear that at least some objects do indeed have parts. For example, my truck has four wheel parts, last I checked. And Tibbles clearly has a tail, just like Descartes has legs. Why not also Tib and D-minus, respectively? In any case, I do not think it wise to deny the existence of such parts just to resolve the Tibbles-Tib dilemma if it can be helped. While this is hardly an airtight argument in favor of the strongest statement of DAUP, it may allow for the existence of Tib and D-minus.

There is a stronger rejoinder to van Inwagen's argument that is made possible by a recasting of the Tibbles-Tib story.[58] One can recast the Tibbles-Tib puzzle in such a way that it expresses the same problem without assuming the existence of Tib. Addressing Tibbles and the body, or collection of body parts, that composes Tibbles, rather than the troublesome Tib, and using the five assumptions raised earlier in our treatment of the Ship of Theseus puzzle, we can adjust the story as follows. First, affirming the existence assumption, there are cats and ps that compose them. Here we have Tibbles, and the ps that compose Tibbles could be Tibbles' body parts.[59] Next, for any cat, in our case Tibbles, the ps that compose it–body parts, say–also compose an object that cannot survive the loss of a part, e.g., ear, whisker, tail, etc., thereby affirming the essentialist assumption. This object could be an aggregate or a collection, in our case the body of

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identity even though DAUP be true. Thus, Van Inwagen's argument does not show what he wants it to show.

[58] I rely on Rea's recasting of the argument in what follows. Cf. Rea [95].

[59] Other compositional items would work just as well.

Tibbles satisfies this assumption. Covering Rea's PACP assumption, for any cat, the ps that compose it compose an object that can survive the loss of at least one of its parts. So, the intuition is that Tibbles can survive the annihilation of its tail whereas its body cannot survive the annihilation of its tail; thus satisfying PACP. As far as the identity assumption is concerned, Tibbles is identical with its body, and at t this seems intuitively plausible on Rea's understanding of identity.[60] Moreover, there is no further object in the story, whether at the same time or some later time, with which Body is identical (unlike the earlier rendition of the story). Finally, Rea's necessity assumption is also present in the story. If Tibbles is identical with Body, Tibbles is necessarily identical with Body. With these assumptions, the argument can be recast without assuming the existence of objects like Tib.

There are two important results. First, since this formulation does not assume the existence of Tib, and so does not assume DAUP or the Doctrine of Arbitrary Undetached Parts, it does not fall prey to van Inwagen's critique.[61] Thus, van Inwagen's response does not resolve the Tibbles puzzle, and so does not resolve the problem of material

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[60] Of course, this is precisely where proponents of material constitution might balk, but such will be addressed in subsequent chapters.

[61] Rea notes that DAUP's relation to the puzzle, as its been recast, is such that it is because DAUP is stronger than the essentialist assumption in the recast argument. In a footnote he talks about the mereological near essentialism that DAUP entails on van Inwagen's interpretation. As Rea construes mereological near essentialism it entails the essentialist assumption, but the reverse is not the case–although Rea notes that van Inwagen would reject the essentialist assumption. Ultimately, as I have noted, van Inwagen thinks that ps compose something only if the ps activity constitutes a life, but, by definition, a living thing is just that kind of being that is capable of changing its parts over time. Cf. Rea [95]: fn 34, and Van Inwagen [90b].

constitution. Second, this particular construal of the problem fails to assume the transitivity of identity. Thus, a denial of the transitivity of identity will ultimately fail to resolve this version of the Tibbles puzzle, and so cannot serve as a solution to the problem of material constitution as a whole.

This new rendition of the argument wrestles with our intuition that Tibbles and its body have different persistence criteria–its body cannot survive the loss of a tail while Tibbles can. So it is evident that Rea's five assumptions are sufficient to generate the problem. From this it follows that one cannot resolve the problem of material constitution by taking any particular stand on either DAUP or the transitivity of identity. In other words, one can generate the problem apart from assuming either DAUP or the transitivity of identity.

We have seen, then, that the problem the Tibbles story raises cannot be resolved either by denying the existence of garden-variety objects, the existence of Tib-like objects, or the transitivity of identity. But such does not hold true if one denies the existence of enduring objects. In other words, the Tibbles story does not raise the problem of material constitution if there are no enduring objects. This is because, on a perduring, or four-dimensionalist, view, the ps that compose Tibbles at t do not also compose Body at t. When considering the four-dimensionalist perspective, there is an ambiguity in expressions of the form "the ps compose O at t". Such can either mean that at t the ps compose an object O, or that the ps compose an object O-at-t. According to a three-dimensionalist understanding these amount to the same thing. O-at-t just is another name for O; however, on the four-dimensionalist view this is not the case. O-at-t is a proper spatio-

temporal subpart, or temporal slice, of O. Thus, the ps that compose O-at-t, on a four-dimensionalist view, do not also wholly compose O; rather, they only partly compose O.[62] As such, there is no reason, on the four-dimensionalist view, to suppose that Body composes Tibbles, because Tibbles is the referent for the object which includes (is composed by) all the proper spatio-temporal parts (subparts) of Tibbles–e.g, Tibbles-at-t, Tibbles-at-t1, Tibbles-at-t2, etc.. Body, however, is not composed by all of those parts, but simply by those proper subparts which include the tail. Thus, Body itself is merely a spatio-temporal proper part of Tibbles, and does not fully compose Tibbles.

So, the intuition that Body and Tibbles are identical is unmotivated on the four-dimensionalist view. And, as such, there is no paradox. This amounts to a denial of the very first premise in the original statement of the problem: namely, that at t Tibbles is identical with Body. On a four-dimensionalist view that is simply false. Thus, the body-minus problem does not generate the problem of material constitution for the four-dimensionalist. Neither does the Ship of Theseus. However, there is a puzzle which does, and this is the puzzle that is found in Allan Gibbard's Lumpl and Goliath story.

IV. Lumpl and Goliath or The Statue and the Clay

The puzzles addressed thus far fail to raise the problem of material constitution for one who denies the existence of enduring objects. Since objects perdure rather than endure, on a four-dimensionalist account, they are composed by temporal parts, or slices, in addition to spatial parts, and in none of the puzzles addressed thus far have the temporal

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[62] Unless O only exists at t. This important qualification will be clarified in the next section.

slices of the related objects–the Ship of Theseus or Tibbles and Body (or even Tibbles-Tib)–overlapped completely. Such is not the case for the puzzle that focuses on the statue, Goliath, and the lump of clay that composes it, Lumpl.

The Lumpl and Goliath story originates with Alan Gibbard[63] and is used by him to support the notion that there is contingent identity. The story is as follows: a sculptor decides to create a statue of the infant Goliath and does it in the following way. He fashions the upper portion out of a piece of clay and the lower portion out of a piece of clay and then puts them together, thereby at the same time creating both the statue and a new piece of clay. A couple of days later after the statue has hardened, the sculptor becomes disenchanted with the work and smashes it, thereby destroying both the piece of clay and the statue at the same time. (If one puzzles over whether or not the piece of clay is still extant, one needs simply to alter the story slightly to include the annihilation of the matter so that it is clear that the statue and the piece of clay are both terminated at the same time.) Gibbard uses this story to say that Lumpl and Goliath are identical. They come into existence at the same time, go out of existence at the same time, persist through all and only the same times, and share all and only the same spatial region. But Gibbard also holds that Lumpl and Goliath are not necessarily identical. For example, it could have been the case that before the statue hardened the sculptor had refashioned the piece of clay into a replica of Michelangelo's David, or it could have been the case that after the statue had hardened one of the fingers of Goliath had fallen off (or been annihilated). In the first case, Lumpl would still exist, though Goliath would not. In the second case, Lumpl would

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[63] Gibbard [75].

no longer exist, but Goliath would. In other words, although Lumpl and Goliath are in fact identical, on Gibbard's view, they are not necessarily identical because they are related differently to their parts: Goliath is essentially related to a particular shape, though not any specific collection of parts, while Lumpl is essentially related to a collection of parts, though not a particular shape. Thus, Gibbard thinks that this story shows that there are contingent identities.

On my view, the mere fact that Lumpl and Goliath differ with respect to essential properties is sufficient to show that they are not identical, and there are a number of essential properties that Lumpl and Goliath do not share that Gibbard does not mention. But admittedly this is no refutation of Gibbard's position, for he questions just what I presume to be the case: namely, that all identities are necessary. There are, however, other properties that Lumpl and Goliath do not share, and that are not themselves of a modal nature. Take, for example, the property that Goliath has of being worth $10,000 dollars because it is a work of art. Surely the lump of clay does not cost nearly so much. Thus, they differ with respect to properties relating to value.

Regardless of one's intuitions on this score, however, the Lumpl-Goliath story still plays an important part in the problem of material constitution because it precludes a four-dimensionalist resolution to the problem. To see why, we need to first render the puzzle in light of Rea's five assumptions.[64] Take the Lumpl-Goliath case where Goliath is said to

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[64] As Rea points out, there are actually two possible ways of construing the puzzle. The first wrestles with our intuitions concerning whether or not objects can have material parts other than those it in fact has–Goliath can survive the loss of its finger, while Lumpl could not survive the loss of that part. And the second wrestles with our intuitions concerning whether or not objects could have different shapes or different arrangements of

be in a position to survive the loss of its finger, while Lumpl could not survive the loss of its finger part. On this rendition of the puzzle, the existence assumption is simply that there are statues and ps that compose them, Goliath fits the bill in this case. The essentialist assumption is that if the ps compose a statue, then the ps compose something that cannot exist and fail to be composed of those ps, i.e., Lumpl. The identity assumption is justified by our intuitions concerning the relationship that in fact obtains between Lumpl and Goliath in the actual world: namely, Lumpl and Goliath have all and only the same parts, both spatial and, in this case, temporal.[65] While denied by Gibbard, the necessity assumption here reflects the intuition that were Lumpl and Goliath identical, then Lumpl could not be distinct from Goliath.[66] Finally, the PACP assumption. If the ps compose a statue, they compose something that could have existed and failed to be composed by them, and that, of course, is once again Goliath in this rendition of the story.

Thus, the problem of material constitution is raised, but the four-dimensionalist cannot resolve it. Why? Because unlike the Tibbles story, where, on the four-

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parts other than those it in fact has–Lumpl could take a different shape and survive, though Goliath could not. Either of these suffices to show that four-dimensionalist responses cannot resolve the problem of material constitution in the Lumpl-Goliath case, so I will address only the first rendering of the puzzle here ([95]: 544-545).

[65] The sharing of spatial parts is central to the identity assumption whereas the sharing of temporal parts is not. I mention the sharing of temporal parts here only to highlight this feature since it is crucial to the argument that four-dimensionalist accounts fail to resolve the problem of material constitution.

[66] These last two assumptions highlight a crucial difference between Gibbard and myself. His resolution to the problem of material constitution is to deny the necessity assumption while mine will ultimately be to deny the identity assumption and offer an alternative relation in its place.

dimensionalist view, Tibbles and Body do not share all of the same spatial parts since they do not exist through all and only the same time, and so do not share all and only the same temporal slices, Lumpl and Goliath do exist through all and only the same time. Therefore, they share all of the same parts, no matter how sliced, and the identity assumption is raised, even on a four-dimensionalist picture.

V. Conclusion

In this chapter, we have assessed three puzzles in light of whether or not they raise the problem of material constitution: Ship of Theseus, Tibbles-Tib, and Lumpl-Goliath. I have argued that the Ship of Theseus does not actually raise the problem, at least as Rea presents the story. Nevertheless, Tibbles-Tib, reformulated to Tibbles-Body, and Lumpl-Goliath do raise the problem and in addition tease out interesting features related to possible resolutions of it. The Tibbles story raises the problem in such a way that it precludes resolution by either denying the existence of garden-variety objects, the existence of Tib-like objects, or the transitivity of identity. Lumpl-Goliath raises the problem in such a way that it precludes resolution by favoring perduring objects over enduring ones; thus, the four-dimensionalist is in no better position *vis-à-vis* the problem of material constitution than is the endurantist.

As we have seen, there are other ways to resolve the problem.[67] Alan Gibbard, for example, denies the necessity assumption on the way to arguing for contingent identity, and by so doing is saved from the problem as stated here. While denying the necessity of

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[67] Rea mentions six: denial of each of the five assumptions (identity, necessity, existence, essentialist, and PACP) and indeterminacy solutions ([95]: 545-550).

identity, whether as an intended means of resolving the problem of material constitution or no, strikes me as odd, I have no intention of explicitly addressing that topic in this dissertation. As I have intimated throughout this chapter, I resolve the problem by denying what amounts to Rea's identity assumption and arguing for a different relation to take its place. Before offering that argument, however, I first address the views of others, like myself, who deny the identity assumption in favor of material constitution.

Chapter 3

Reductions and Parts

I. Chapter Introduction

In an important article in the area of object individuation, David Wiggins argued that two objects could occupy the same space at the same time under certain conditions.[1] Using Leibniz' Law as his arbiter of identity, he argued that a tree and the aggregate of cellulose molecules that composes it are not identical, though they occupy just the same spatial region at a given time.[2] It is important, however, that the two objects not be two trees, for Wiggins argued that a condition of spatial co-location without identity is that the spatially coincident objects be of different kinds. On his view, then, no two trees (cats, statues, whatever) could occupy just the same spatial region at a given time and fail to be identical.

While many have thought Wiggins' spatial coincidence, or constitution, thesis to be implausible on its face, many others have answered his call to develop a complete, consistent picture of the relation that must obtain between two spatially co-located objects. In this chapter, I address two such views. In the first, Frederick Doepke further develops Wiggins' thesis and uses it to argue against eliminitive reductionism. In the second, Judith Jarvis Thomson makes use of another metaphysical relation–that between

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[1] [1968]

[2] [1968]: 4-5. He also used a form of Geach's Tibbles-Tib argument in favor of this thesis.

parts and wholes (mereology)–to provide a complete picture of the constitution relation. Ultimately, I find both views to be inadequate. Doepke's is incomplete as it stands and fails to finally silence eliminitive reductionism. While Thomson offers a far more complete picture of the constitution relation, it comes at too great a price: namely, a bevy of redundant, ontological entities called fusions and a mereological picture that is not obviously tied to the real world in any way.

II. Frederick Doepke: Reduction and Constitution

Following David Wiggins, Frederick Doepke argues that (at least) two things can occupy the same place at the same time.[3] Examples of spatially coinciding objects might be a statue and the gold of the statue, a ship and the collection of boards that make it up, a person and his or her body. Doepke, however, does not think that Wiggins has provided an adequate account of the relationship between coincident objects.[4] He argues for his own account of object coincidence in "Spatially Coinciding Objects", and provides, along the way, arguments against four possible counter responses to the material constitution view.[5] Here I am concerned mainly with Doepke's own view, but will also address elements of his anti-reductivist argument where such is telling about his own understanding of material constitution.[6]

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[3] Wiggins argues this, for example, in [68].

[4] I will take 'coincident' and its cognates, when applied to objects, to refer to spatially, and hence temporally, coinciding objects.

[5] Frederick Doepke [82].

[6] The Reductionism that Doepke argues against is one that reduces macro objects to their micro constituent parts, thereby riding the world of everyday, garden-variety

1. Doepke's Account of the 'is' of Constitution

Doepke finds an adequate account of the relationship between coincident objects wanting in the literature, and he thinks an account will make the existence of such objects more palatable to the naysayers.[7] Motivating the need for an account of the relationship are two questions; questions that a person who argues that an identity holds between the "two" objects has no need to answer, but for which Doepke, and others who think that some other relation holds between the "two" objects, *must* provide an answer. First, why are these two distinct, spatially coinciding objects so similar? Second, given that they hold all of their spatial parts in common, how can they be different? An answer to both questions, Doepke maintains, will provide an account of the *is* of constitution.

On the one hand, the person who argues that an identity holds between the "two" objects has no need to account for their similarity–there is but one object. On the other hand, the person who argues that there are two objects present must provide an explanation, and Doepke does just that. First, he points out that properties of an object (e.g., spatial properties [place, shape, size], weight, taste, color, smell, etc.) are determined by the parts of an object. If objects have exactly the same parts at the same time, they will share the same properties.[8] Hence, Doepke argues that "Since it is logically

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objects and ostensibly dissolving the problem of material constitution.

[7] [82]: 10. Much has been published on this topic since Doepke's contribution.

[8] While Doepke is not entirely clear on this point, he does not think that they will share all of the same properties. For example, they will not share all the properties associated with one another's persistence and/or perishability criteria. This will be addressed more later.

possible for two things to share the same parts at the same time [he can] explain why objects are alike...otherwise than by identifying them".[9]

Doepke has accounted for coincident objects which share all the same parts, but he recognizes that it is possible they do not share all of their parts. For example, a person and the collection of particles of which she or he is composed do not share all of the same parts, nor does the Ship of Theseus and the collection of wood cells that make up the ship. Take the Ship of Theseus. The boards that make up the ship are parts of the ship, but the boards are not parts of the collection of wood cells that make up the ship. Similarly for the person and the collection of particles that composes him or her. The heart and lungs are parts of the person, but not of the collection of particles. To handle this problem, Doepke argues that the ship and the collection of wood cells are similar in every respect as if they had the same, and only the same, parts. This is because the "additional" parts had by the ship are only extant because certain sub-sets of the collection of wood cells are "*accidentally* interrelated in ways *essential* to the existence of the 'additional' parts".[10] That is, the presence of the "additional" parts can be wholly explained in terms of accidental structural characteristics within the collection of particles or wood cells that are necessary for either a heart or a board to be present, respectively. Structural properties are accidental for the collection of wood cells, but are essential for the mid-level objects/parts that are the planks of the ship. The same can be said for human bodily parts.

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[9] [82]: 15.

[10] [82]: 16.

Doepke is finally in a position to explicate what he terms the complete-composition relation, i.e., the relation that accounts for the objects' similarity. He stipulates the recursive definition of 'completely-composed of':

y is completely-composed of *x* at time *t* iff$_{(def.)}$ at time *t*,

1) *x* has parts &,

2) every part of *x* is a part of *y* &,

3) any part of *y* which is not a part of *x* is completely-composed of parts of *x*.[11]

The reason why spatially coinciding objects are so similar is that one object is completely-composed of the other. In addition, certain objects will be completely-composed of each other, e.g., you and your body, a rock and itself, because they have exactly the same parts.[12]

After answering the similarity question and providing the first installment of his definition of the *is* of constitution, Doepke addresses the dissimilarity question. The alleged coincident objects have already been shown to be dissimilar in some respect, or there would be no need to count them as "two" objects. For example, one reason that the statue and the gold that composes the statue are said to be different is that the gold is said to survive the destruction of the statue. That is, the gold has different persistence criteria

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[11] [82]: 17.

[12] [82]: 17. This apparent symmetry in the completely-composed relation appears at odds with what Doepke says elsewhere. I will return to this apparent dissonance later.

than does the statue. Doepke seeks to make sense of this difference between two objects which share all and only the same parts using the notion of constitution.

Doepke argues that the purpose served by the concept of constitution is to make intelligible the perishability of an object. Given that a cup is composed of glass, to say that the cup is destroyed is just to say that the glass loses the shape of a cup and assumes the shape of shards littering the floor. The notion of constitution allows us to make sense of the cup's destruction, since it allows us to pick out a substratum, the glass, which persists beyond the cup's destruction. Doepke, then, offers the following definition of 'constitution', "*x* constitutes *y* at time *t* if and only if *x* could be a substratum of *y*'s destruction".[13]

Doepke then accounts for the formal properties of both complete-composition and constitution. Where identity is symmetrical and transitive, complete-composition (at time *t*) is asymmetrical (*x* is composed of *y* [at time *t*] only if it is not the case that *y* is composed of *x* [at time *t*]) and transitive. Similarly, constitution (at time *t*) is asymmetrical and transitive. Doepke provides an example of the asymmetry of constitution that is instructive.

Constitution (at time *t*) is asymmetrical: "if *x* constitutes *y* at time *t*, then the fact that *y* could perish at time *t* is explainable by describing a certain change, beginning at time *t*, in which *x* would be the substratum".[14] He tells the story of a person and his or her body. You do not constitute your body, but your body does constitute you. You are

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[13] [82]: 19.

[14] [82]: 19.

perishable because your body could undergo certain changes in which the neural structures responsible for consciousness would be lost. The description of your body at time *t*, with neural structures intact, provides an explanation of your existence at time *t*, and supplies sufficient (or so it would seem) explanation for your continued existence through time *t**. But if your body were to undergo a change in the neural structure resulting in the loss of consciousness, you would perish. On the other hand, the neural structures themselves, though essential for you, are accidental to your body. Hence, your existence and perishability are both determined by an accidental characteristic of your body, the requisite neural structure, but we cannot explain your body's existence by referring to you, because your existence will always be irrelevant in accounting for your body's existence. So, your body does constitute you, but you do not constitute your body.[15] A difference in the relationship between one object, the person, and its structural characteristics, and the other object, his or her body, and the same structural characteristics–i.e., essential for the former while accidental for the latter–explains the difference in the perishability and persistence conditions between the two, and so the difference between the objects.

Combining, then, the foregoing discussions of complete-composition *and* the statement and formal properties of constitution, Doepke claims to have provided an account of the *is* of *constitution*.[16] We next turn to Doepke's argument against the

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[15] [82]: 19-20.

[16] [82]: 21. Although the distinction is, at times, quite slight, from here on out I will use '*constitution*' to refer to the wider sense of the *is* of constitution, and 'constitution' to refer to the second conceptual conjunct within Doepke's account of *constitution*. Relevant cognates will also be denoted by *italic* or standard type, respectively.

reductivist response to the notion of coincident objects. While at first glance this treatment may seem out of place in a section devoted to explaining Doepke's understanding of the *constitution* relation, there is a bothersome ambiguity in Doepke's view that will be made more clear when contrasted with the reductivist position he is arguing against.

2. Doepke's Anti-Reductivist Argument

With his account of *constitution* complete, Doepke moves to a consideration of the reductivist response to the notion of coincident objects. He provides three reasons one might have a metaphysical bias toward giving priority to metaphysically *constituting* objects rather than the objects so *constituted*. One reason for favoring metaphysically *constituting* objects is that they are generally less dispensable for thought than objects *constituted*. That is, given a gold statue (perishable object) and the gold that composes the statue (substratum), any and all of the relevant properties at time *t* are ascribable to the *constituting* object, and the *constituted* object can be disregarded. The same, however, cannot be said in reverse.[17]

Another reason Doepke gives for favoring metaphysically *constituting* objects is that whenever something is created or destroyed there is some time during the change in which the existence of the object created or destroyed is indeterminate, thus creating a

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[17] [82]: 21. Again, strictly speaking, not all properties are reducible in just this way on Doepke's view. This will be made more clear a bit later. Also, by way of foreshadowing, Doepke's accounts sounds close to Lynne Rudder Baker here with regard to properties, though Baker holds that constituted objects are metaphysically prior. I address Baker's view in chapter four.

reference problem.[18] This problem can be eliminated, however, by referring instead to the *constituting* objects (e.g., the gold of the statue) whose existence remains relatively determinate.[19]

While the first two reasons for favoring metaphysically *constituting* objects are but briefly noted, the third reason commands Doepke's sustained attention. While objects *constituted* can often be replaced by references to the objects which *constitute* them, Doepke wonders whether they can always be so replaced. The reductivist response is that they can. Indeed, the reductivist makes the stronger claim, namely, that one is never justified in making an inference from the existence of some *constituting* object x to the existence of some *constituted* object y.[20] This, according to Doepke, is the third reason for favoring metaphysically constituting objects, and it is decisive, if it holds.

The reductivist view does seem attractive. Why not say that a reference to a person just is a reference to a collection of particles? That is to say, persons are reducible to the collections of particles that *constitute* them. Doepke counters that there are certain instantiated properties in the world which cannot be instantiated by other than the objects *constituted*.[21]

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[18] Sadly, Doepke is not clear whether he intends to suggest an epistemic or metaphysical indeterminacy.

[19] [82]: 21.

[20] Thus, the reductionism that Doepke addresses here is eliminitive.

[21] [82]: 21. Thus he cannot hold that all properties of *constituted* things are held in common with their constituents.

Doepke's example relies on the notions of consciousness and memory. A memory of mine, say, that of first hearing about Ronald Reagan being shot, is not a property which can be instantiated by a collection of particles (or so Doepke holds). The collection of particles persists just as long as the particles do, and any change (addition, subtraction or replacement) results in a new collection. But having a true memory requires that the memory can be traced back, in accordance with certain identity criteria, to the same thing that had the experience in the first place. Nothing can begin to exist with a memory, and the relevant collection of particles may be in a humanoid structure for the first time. It follows, then, that I exist as a separate substance.[22]

The reductivist will counter that one can tell a story, one which captures all of the facts, without any mention of objects *constituted*, like people. For example, to have a memory just is to possess a sub-collection of particles in a certain pattern as a result of the commerce of certain of the collection's particles with sound waves (the hearing of Reagan being shot), and the continuation of this pattern (the particle make-up is immaterial) from one collection of particles to another (the preserving of the memory). Upon the having of the memory, then, this pattern of particles has an effect on another sub-collection of particles rendering, at least in part, a certain motion in this other particle area which is the having of the memory. So, the challenge to see how one can justify talk of objects *constituted* remains unanswered.

After presenting the possible reductivist response, Doepke offers the meat of his argument against it. First, calling the having of a memory (i.e., the hearing, preserving,

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[22] [82]: 22.

and remembering Reagan being shot) a single event E, and allowing, for the sake of argument, that the occurrence of E can, in some way, be explained by referring simply to a collection of particles, he claims that "you differ essentially from a collection of particles in that you can literally gain and loose [sic] particles".[23] This is precisely what allows a person to serve as the substratum of E.

During the development of E you undoubtedly undergo some change in particles. Doepke argues that "only because you do continue to be present throughout these changes in the development of E can we explain, at each stage of the development, how that stage came about as the result of some one thing (you) having advanced through the various, earlier stages, in accordance with certain laws".[24] References to you as a substrata can accomplish this because the actual particles which make you up are accidental to you. On the other hand, one cannot account for the development of E referring only to the collection of particles as substrata, since at each stage there is a different collection of particles. There is no continuity between the collections of particles that would account for the having of E. But, as Doepke indicates, *you* are accidentally composed of particles, so the coming and going of particles (the fact that you are composed of a different collection of particles at any time t) can be ignored when accounting for E, whereas it could not be ignored if the substrata were the collection of particles. Doepke concludes, "since, in order to explain how E occurred, it is pointless to take account of these phenomena [the comings and goings of particles], we ought not to

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[23] [82]: 23.

[24] [82]: 23.

do so".[25] Thus, a reductivist position that eliminates *constituted* objects in favor of *constituting* objects cannot account for certain phenomena, like memories. Given that memories are real, this amounts to an admission of the existence of *constituted* objects, e.g., persons, and to a rejection of reductivism.

So goes Doepke's argument against the reductivist response to the notion of *coincident* objects. I turn now to an evaluation of his argument, and will follow the evaluation with a possible reductivist response to his portrayal of the reductivist account of having a memory. Ultimately I show that Doepke's representation of the *constitution* relation is confused and that the reductivist can counter Doepke's memory challenge, but only at the cost of affirming a different *constituted* entity.

3. Doepke's Asymmetry and the Constitution of the Body

There is something troubling about Doepke's account of the *is* of *constitution* and his argument against the reductivist response. Doepke claims that both the complete-composition and constitution relations are asymmetrical. That is, unlike identity, these two relations only go one direction: if x is composed of y at time t, then y cannot be composed of x at time t (the same can be said of constitution). It is unclear, however, how this asymmetry can be made consistent with Doepke's view of the relationship between a person and his or her body. Two issues need to be clarified. First, as indicated earlier, on Doepke's view a person's body constitutes that person. Certain neural structures, accidental to the make up of the body, are essential to the make up of the person. In fact, the presence of certain neural structures accounts for the persistence of

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[25] [82]: 23.

the person, while the lack of those same neural structures would account for the perishing of the person.[26] It is not yet clear, however, what constitutes the body. This leads to the second issue that needs clarification: namely, Doepke's comment, noted earlier, that "objects like you and your body, and a rock and itself, which have exactly the same parts, are completely-composed of each other", thus hinting that complete-composition is a symmetrical relation[27]

This comment does not seem to square well with Doepke's claim that the complete-composition relation is an asymmetrical relation. By way of response, Doepke could focus on the temporal clause "at time *t*" and claim that, while at time *t* there is an asymmetrical complete-composition relation where one's body completely-composes him or her, at time *t** the relation could switch and one could be said to asymmetrically completely-compose his or her body. The apparent symmetry, then, would only obtain across time, while the asymmetrical relation would continue to hold at any given time; thus, resolving the alleged inconsistency. Even so, a symmetrical relation at the level of complete-composition does not impact the asymmetry of constitution, though it would seem to affect *constitution*, and so is not helpful when addressing the constitution of the body. Doepke states elsewhere that, "although it is relatively unlikely that an arbitrarily picked object will constitute another object, we should not be surprised to find it

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[26]Though Doepke does not make the relationship between perishability and persistence clear in this article, he does say elsewhere that, "...references to constituting objects serve not only to explain conditions of perishing but also conditions of persistence" (Frederick Doepke, [1986]: 390).

[27] [82]: 17.

constituted *by* another object. For if an object is not constituted by any object at all then, like a Democritean atom, it cannot perish".[28] I am sure Doepke does not take the body to be a Democritean atom. It is reasonable, then, to inquire as to its constitutional relations. Doepke does not say what constitutes the body, but it is here that one can find an answer to his anti-reductivist argument.

A first place to look for the constitution of the body, intuitively speaking, is the collection of particles. After all, Doepke allows that the collection of particles completely-composes the person.[29] One might think that the collection of particles also completely-composes the body. Given that the person completely-composes his or her body and the transitivity of the complete-composition relation, Doepke appears to be committed to this result. Nevertheless, as we shall see this does not help us to determine what constitutes the body.

In a later article on a related subject,"The Trees of Constitution", Doepke reiterates the familiar notion that "the person's body constitutes the person; a person does not constitute his or her body".[30] But, Doepke maintains, the asymmetrical relation of constitution does not necessarily relate only to two objects. One object can constitute two other objects, in a tree-like asymmetry, provided that the two constituted objects are not themselves related in terms of constitution.

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[28] [86]: 389.

[29] [82]: 23.

[30] [86]: 385.

For example, take some stone, a stone statue, and a landmark. Like a gold statue and the gold that constitutes it, the shape of the stone, while accidental to the stone itself, is essential to the statue. In addition, the stone and the statue share all of the same parts. So, the stone is said to *constitute* the statue. In addition, the stone constitutes the landmark, but not in the same fashion. The shape of the stone could be altered, thus altering the shape of the landmark, but the landmark would yet remain. That is just to say that the shape of both the stone and the landmark are accidental qualities of each. However, we might say that the stone has a certain iridescent quality. This quality is accidental to the stone, but, we will say, it is essential to the landmark. That is just to say that the landmark would perish if the iridescent quality were lost. In this example, neither the statue nor the landmark constitute one another, but both are constituted by the stone.[31]

Still, it is an open question whether this tree-like constitution relationship helps to determine what constitutes the body, and I do not think that it does. First, the constitution relationship between the person and the collection of particles is yet to be determined. But if the collection of particles is put in the position of the stone, and the person and the body in the other two positions, then, although the constitution of the body is clear, the resultant relational schema does not fit the tree method, as there are constitutional relations between the body and the person. Second, if the body is put in the position of

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[31] This example is borrowed from Doepke [86]: 386-387. Actually, one might claim that the statue does constitute the landmark, since the statue has an iridescent quality which is accidental to it, but essential to the landmark. Or, conversely, that the landmark constitutes the statue, since it has a certain shape which is accidental to it, but essential to the statue. But the careful reader will note that this supposed constitution relationship is symmetrical, so it cannot fit the constitution relationship that Doepke is championing.

the stone, and the person and the collection of particles in the other two positions, it remains unclear what constitutes the body. So we must look further.

Doepke allows for the possibility of an inverted tree of constitution as well.[32] In this case, two objects constitute another object. But the inverted tree will only work if one of the two constituting objects is itself constituted by the other constituting object. If this were not the case, then one would have two objects, both of which possess accidental qualities that account for the perishing and persisting of an object. One could then imagine the loss of one of the two objects, thereby resulting in the perishing of the constituted object, while the remaining constituting object accounts for the persisting of the constituted object. As long as one of the constituting objects constitutes the other, however, no such incoherence arises.[33]

Doepke offers, as an example, a ship composed of wood planks. Both the collection of wood planks and the collection of wood cells constitute the ship. The ship would perish if either the collection of planks or the collection of cells lost its shape. Further, the collection of wood planks would perish if the collection of cells lost its shape such that the shape of the planks was no longer present. So, the collection of wood cells constitutes the collection of wood planks, and both constitute the ship, which really

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[32] [86]: 390-391.

[33] [86]: 390.

amounts to saying that the constitution relationship is transitive between the collection of wood cells, the collection of wood planks, and the ship.[34]

The question remains whether a person, his or her body, and the collection of particles that completely-composes him or her will fit into this framework. Doepke would say, it seems, that there is no match between the example given and our interest in finding the constitution of the body, but I argue that there is.[35] In so doing, I show that the reductivist can wriggle free of Doepke's challenge, but only by embracing *constituted* objects.

4. On What Constitutes the Body: The Reductivist Response

I contend that the example of the ship is relevant to determining the constitution relations between a person, his or her body, and the collection of particles that completely-composes him or her. First, however, I must argue that the collection of particles, in a particular array, is what constitutes the body.

What do we mean by 'the body'? One might claim that the body is simply a collection of body parts. This seems intuitive enough. What more is a body than the collection of vascular parts, epidermal parts, gastro-intestinal parts (e.g., intestines, stomach), nerve parts (e.g., central nervous system, peripheral nervous system), etc.?[36]

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[34] [86]: 391. For my part, I fail to see what the inverted tree adds to the view that is not already present in light of the transitivity of constitution. Still, since the inverted tree is Doepke's view, and I am arguing that there is a successful reductivist response to Doepke's challenge, I make use of the inverted tree structure in what follows.

[35] [82]: 23.

[36] I do not intend to be claiming anything overly controversial here. How the body parts are parsed out is not all that important, so long as they are parsed out. Nor do I

There seems to be nothing over and above the various body parts that the "body" is, so the body *is* the collection of body parts. Doepke should not chaff at this supposition, since it is by the sharing of all their parts that the Ship of Theseus and the collection of wood planks that make up the ship are said to be similar.[37] One would think the same would hold for the body and the collection of body parts.

However, if it is allowed that the body is the collection of body parts which make it up, it is equally clear that the body is constituted by the collection of particles that completely-compose it. Take the heart as an example. Doepke has already said that the heart results because of a sub-collection of particles, within the collection of particles that make up the entire body, which is accidentally related in such a way that is essential for the heart to be present there and then.[38] That is, within the collection of particles that make up the body, there is a sub-collection related in such a way (we could just as easily say 'patterned in such a way' or 'structured in such a way') that constitutes, provides both persistence and perishability criteria for, the heart. Now, if the heart is constituted by a sub-collection of particles in this way, it follows that the body is constituted by the collection of particles that make it up, since all of the body parts will be constituted in the

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think that Doepke would have any particular problem with my claim.

[37] [82]: 16. Here 'is' is intended as the 'is' of *constitution*.

[38] [82]: 16.

same manner that the heart is constituted, and the body just is the collection of all the body parts.[39]

Given that the constitution relation is transitive, the foregoing seems to be just what is going on in the ship example alluded to earlier. The collection of wood cells constitutes the collection of wood planks. Both the collection of wood cells and the collection of wood planks, in turn, constitute the ship. But, and here is the important point, the collection of wood planks joins in the constitution of the ship only by virtue of certain elements of its own constitution. That is, one need not talk about the collection of wood planks at all, in order to account for the constitution of the ship. One merely has to talk about the relations within sub-collections of the wood cells, which accounts for the collection of wood planks, and then talk about the relations between the various sub-collections, which accounts for the ship itself.

The same is true for people. One can account for the persistence and perishability of a person given certain neural structures. In addition, one can account for the persistence and perishability of the neural structures given certain accidental relations of particles within the collection of particles that completely-composes the body. So, one can ultimately account for the persistence and perishability of a person in reference to certain patterns of particles within the collection of particles that completely-composes

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[39]How the 'is' is read here is unimportant in one sense. If we take the 'is' to be the *is* of identity, there is no problem with our move from "constitution of body parts" to "constitution of body", since identity is a transitive relation. The same is true if 'is' refers to the *is* of constitution, since *constitution* is transitive as well. Of course, ultimately the reductivist is arguing for an 'is' of identity while Doepke and myself are arguing for an 'is' of constitution.

that person, which is just to say that the collection of particles, in a certain array, constitutes that person. But if a person's persistence criteria ultimately derives from the collection of particles in a particular array, there is no need to postulate a separate substance, namely, that person, to persist as the substratum of the memory event E. The collection of particles in a particular array can serve in the necessary role.

Of course, this is consistent with the view that there are (at least) two objects present: the object which is essentially related to its membership and the object which is essentially related to its structure or form. The latter is the "person", while the former just is the collection of particles.[40] Indeed, there are still two objects present, objects which differ with respect to their modal properties, so while the reductivist is able to meet Doepke's challenge, he or she ultimately fails to eliminate all constituted objects. Thus, there is, on my view, nothing wrong with Doepke's conclusion. My problem with Doepke is how he arrives at this conclusion.

First, the reductivist can meet Doepke's challenge in such a way that is consistent with Doepke's view, though, admittedly, the response does not ultimately succeed to deny all *constituted* objects. Second, Doepke's argument against the reductivist teases out an inconsistency in his own view regarding the symmetry or asymmetry of the *constitution* relation. He seems to want it both ways. In his argument against the reductivist he needs the relation to be symmetrical, but in his explanation of the formal properties of the relation he denies, and indeed argues against, symmetry. A temporally relative notion of symmetry may be open to Doepke, but such a move appears *ad hoc* at best. We are left to

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[40] The latter is the person, but not in the sense that Doepke intends.

wonder what it is about *constitution* that denies symmetry at a temporal moment but affirms symmetry across time. Doepke gives no answer, and his account of *constitution* is confusing and incomplete in light of this.

Thus, Fred Doepke's account of the constitution relation is found wanting. We turn now to an alternative account that is offered by Judith Jarvis Thomson. While her view is less vague, we will find that it has problems of its own.

III. Judith Jarvis Thomson: Mereology and Constitution

1. Thomson's Mereological View

Judith Jarvis Thomson develops her version of constitution using two primary examples: a Tinkertoy house and the wood that makes it up and the ever ubiquitous statue and portion of clay. She lays out the Tinkertoy house example in an early article on the subject.[41] Consider a pile of Tinkertoys which are used to construct a house at some time, t. Call the house, House. House is placed on a shelf at time t1, and it seems clear that at t1 House is identical with the Tinkertoy house on the shelf at t1. Now suppose we were to name the collection of wood[42] that is on the shelf at t1, Wood. On the face of it,

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[41] [83]

[42] Thomson calls this a fusion rather than a collection initially. In so doing, she develops another important element of her account, the fusion principle: there exists some x such that if x is a set of S, then there exists a unique y such that y is the fusion of S. The fusion principle aids in developing the problem of constitution, but, as she notes ([83]: §2), while it is clear that if something like the fusion principle is true, the problem of material constitution is generated–given her Tinkertoy House example–with the exchange of one of the logs, even if the fusion principle is not true, it turns out that so long as the phrase "the wood" has a reference, then the problem of material constitution is still motivated by her Tinkertoy house example. I will address Thomson's fusion principle in more detail later. Here I am satisfied to address her weaker thesis.

Thomson contends, House is also identical with Wood at t1. But now we have a problem. If one of the Tinkertoy pieces is removed[43] from the House, say, an unimportant piece near the roof, and thrown on the floor at t2, then one would think that House is still on the shelf at t2 but Wood is not, because Wood is also partially on the floor at t2. But such cannot be if House and Wood are identical. Thus, this concern raises the problem of material constitution, according to Thomson, and motivates her account of that relation.

After fleshing out her example, Thomson provides a brief account of her definitions of constitution and identity, both of which I find problematic. Thomson defines constitution as follows: "x constitutes y at t =df. x is a part of y at t and y is a part of x at t".[44] She maintains that what this amounts to with regard to her example is that House constitutes Wood at t1 and Wood constitutes House at t1, which is a consequence she embraces. However, a further consequence of her definition of constitution as stated here is that the Tinkertoys do not constitute House or Wood at t1, for the house, very clearly, is not a part of the Tinkertoys at t1 any more than, say, the heart is a part of the collection of cells of any given person at any given time, or a plank is a part of the collection of wood cells of a given ship at any particular time. Since she requires parthood to go both ways for constitution to work, this edition of her view is not able to account for paradigm cases of constitution, including, it would seem, her own example case: where House constitutes Wood and vice versa. Moreover, the primary constituting agent, in terms of

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[43] Alternatively, it could be replaced by another piece and still generate the problem.

[44] [83]: fn 11.

order, as she sees it, is the collection of Tinkertoys, but the Tinkertoys cannot constitute either House or Wood because neither House nor Wood are a part of the Tinkertoys. Thomson addresses this problem in a subsequent essay.

Thomson defines identity as follows: "x is identical to y iff for all t if xE@t or yE@t, then x is a part of y at t and y is a part of x at t".[45] The problem with this identity axiom, which comes straight out of her cross temporal calculus of individuals, is that it is too loose. For example, it allows for Gibbard-type cases to be cases of identity; it conflates what Gibbard calls contingent identity with identity *simpliciter*, something that not even Gibbard allows.[46] Admittedly, Thomson tepidly offers an alternative modal account of identity which addresses this concern.[47] She deals with the Gibbard case relative to her Tinkertoys and recognizes that she may need to give up the cross temporal calculus of individuals in favor of a modal cross temporal calculus of individuals. In the modal version, the right half of the identity axiom is taken to be necessary *de dicto*.

One wonders, however, why Thomson needs this mereological identity axiom in addition to, or instead of, the more standard Principle of the Indiscernibility of Identicals, or what has become known as Leibniz Law.[48] Her temporally and modally qualified

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[45] [83]: 38. Read "xE@t" as "x exists at time t". An example is Lumpl and Goliath, as I note shortly.

[46] Cf. Gibbard [75]. Cf. Johnston [92] who also argues for the inadequacy of the mereological axiom of identity to account for identity *simpliciter*.

[47] [83]: 42.

[48] Throughout the dissertation I use 'Leibniz Law' to refer to the indiscernibility of identicals–$(x)(y)((x = y) \rightarrow (F)(Fx \leftrightarrow Fy))$–unless otherwise noted.

version of the Calculus of Individuals identity axiom may amount to the same thing as Leibniz Law, but Thomson has not said as much and has not given an accounting of the relationship between the two principles.[49] I side with Mark Johnston and others in suggesting that the second order characterization of identity, or Leibniz Law, has achieved a canonical position in philosophy due in part to its pre-theoretic, intuitive force, its perseverance, both in terms of defensibility and usefulness, throughout the history of modern philosophy and the contemporary period, and finally, as Johnston suggests, by the mere fact of its wide standing support, understanding, and uncontroversial position as a logical principle. At the very least, then, if we are to give up that second order principle of identity in favor of some other principle, including the mereological principle of identity no matter how qualified, we need first to understand what the mereological principle is saying, especially in relation to the sharing of properties among "identical" objects, and second why it is to be preferred over against the established principle from second order logic.[50] In any case, I will continue to use Leibniz Law as a viable identity thesis as I have throughout this dissertation.

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[49] One wonders whether or not Thomson is making certain assumptions concerning the relationship between the parts of an object and its properties, and/or the relevance of certain types of properties, e.g., extrinsic or relational properties, to questions concerning identity.

[50] Neither of these, Johnston suggests, is forthcoming, though he was then unaware of Thomson's recent paper. Seeing none from the tent of mereology, regarding motivating a metaphysic as opposed to merely creating one, Johnston thinks that mereology is no better off than Mariology ([92]: 52).

Thomson provides a more extended treatment of her version of constitution in a subsequent essay. Since this represents her mature account, and in light of the deficiencies in her earlier account, it is to this treatment that I now turn.

2. Thomson's Mereological View: The Sequel

In "The Statue and the Clay",[51] Thomson sets up the problem of constitution using the standard example of a portion of clay, which she names Clay, and a statue, which she names Alfred. Clay is in existence already at 9am but Alfred does not come into existence until a later time, say, 2pm. Thomson then addresses the question of whether or not Clay and Alfred are identical by laying out some of the commonsense notions surrounding the evolution of Alfred from Clay. In particular, she canvasses some of the reasons why Alfred and Clay are taken to be nonidentical, including that Alfred and Clay exist at different times. She also considers why it is that we cannot fairly claim that Clay simply becomes Alfred, just like we might think that Clay becomes a mound of clay, or a scattered portion of clay as opposed to a nonscattered portion of clay and the like, by virtue of changes in shape and spatial proximity.[52]

Thomson then offers what is called the replacement argument, which is essentially her argument concerning the Tinkertoy house and the replacement of the piece of wood that generates the nonidentity of House and Wood in her earlier paper, but here changed to match her new example. Instead of a Tinkertoy piece being removed or replaced in House and then tossed on the floor, a part of Clay–the part itself being a portion of clay–is

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[51] [98]

[52] [98]: 150.

removed or replaced and then thrown on the floor. As with the earlier example, Alfred is yet on the shelf after this is done, but Clay now fails to be on the shelf, being also partially on the floor.

Thomson does not provide a clear argument in favor of the thesis that artefacts can survive (at least) partial part replacement. Instead, she notes that while it does seem fairly straightforward that artefacts, and perhaps other objects, can undergo replacement of parts, how big a part replacement an artefact can undergo and still survive is debatable.[53] Ultimately, how large a part replacement at a given time an artefact can survive or whether or not an artefact can survive complete replacement over time are issues which have led some to ultimately decide that either artefacts cannot undergo any part replacement whatsoever or that there are no artefacts at all.[54] Thomson will offer no argument against either view[55] but will simply assume that artefacts can undergo some part replacement and will leave how great such replacement can be to someone else. She does, however, assume that in her example Alfred exists at a particular location while undergoing a part replacement of, say, a hand, but that Clay no longer exists at that particular location–on the shelf, table, whatever–because a new piece has been added to Alfred that was not a part of Clay–the original portion–and the part that was subtracted from Alfred, a hand, is now on the floor. And so Clay, the original portion, is now both

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[53] Of course, this is the Ship of Theseus problem.

[54] Chisholm [76], Van Inwagen [90b], and Unger [79].

[55] Though she does say that such "responses strike me as weird" (153).

on the shelf and on the floor while Alfred is only on the shelf. The relationship between Alfred and Clay, then, is not identity; rather, it is one of constitution.

A. Constitution Defined

Before offering her revised account of the constitution relation, Thomson addresses three issues that are relevant to her view. First, she addresses the parthood relation and takes it to be a three-place relation between a part and a whole at a time: i.e., x is a part of y at t.[56] Second, she does not limit parthood to proper parthood. When she uses 'part' it could include the thing itself so that the following thesis is true: if x exists at a particular time, then x is a part of x at that time.[57] Moreover, parthood entails existence, so some object x can be a part of some object y at a particular time only if x and y exist at that time. She notes some consequences of this. Nonexistent objects do not have parts, so we cannot say that a unicorn has a horn part because unicorns do not exist. Similarly, objects that have existed but no longer exist, or that do not yet exist but will, do not have parts. Thus we cannot say that Caesar has a nose as a part since he no longer exists and my future child does not have limb parts because it does not yet exist. Third, she restricts her notion of the parthood relation to the material realm: "x is a part of y at t iff the space occupied by x at t is part of the space occupied by y at t", though she does not deny that if there is an immaterial realm it too may (at least partially) consist of parts.[58]

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[56] [98]: 154.

[57] [98]: 154.

[58] [98]: 155.

Thomson is now in a position to offer an initial definition of constitution: "x constitutes y at t only if x and y occupy the same space at t".[59] In other words, only if x and y are co-located. While this condition is necessary, it is not sufficient. So she provides the following, which gives both necessary and sufficient conditions for constitution and thus a complete definition for constitution.[60]

x constitutes y at t =df.

1) x is a part of y at t and y is a part of x at t, and

2) there exists some z such that z is a part of x at t and

necessarily for all T if x exists at T, then z is a part of x at T

and for all z' if z' is a part of z at t, then possibly there

exists some T such that y exists at T and it is not the case

that z' is a part of y at T, and

3) it is not the case that there exists some z such that z is a part of y

at t and necessarily for all T if y exists at T, then z is a part of y at T

and for all z', if z' is a part of z at t, then possibly there exists some

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[59] [98]: 155. Note that her understanding of constitution has changed in such a way that the counterexamples mentioned earlier re: the constitution relation between the Tinkertoy house and the wood no longer count against her view. Cf. Section IV, subsection 1.

[60] This definition of constitution takes into account what Thomson claims is a difference that Clay and Alfred have with respect to their parts. In Rea fashion, she argues that they are differently related to their parts. Clay being a portion is essentially related to its parts whereas Alfred being an artefact is not, but is essentially related to its form.

T such that x exists at T and it is not the case that z' is a part of x at T.[61]

The first condition amounts to saying that the objects in question must be parts of one another if they are to stand in the constitution relation with regard to one another. Moreover, assuming all parts are spatial, it entails co-location and so accounts for the initial necessary, though insufficient, definition she offers. The second and third conditions concern the relationships that the respective objects have with regard to their parts. One is essentially related to its parts–namely, x, which must have part z if it is to exist–while the other is not essentially related to those parts–namely, y, which can exist even if z is not among its parts. Thus, it is possible that y exist without x, according to the second condition. According to the third condition, the reverse is not true. That is, there is no part of y that is essential to it that is not also essential to x. According to the second and third conditions, then, there may or may not be parts of y that are essential to it, but if x constitutes y, then there will be no parts that are essential to y that are not also essential to x (condition 3), though there will be parts that are essential to x that are not also essential

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[61] [98]: 157. In the body of the text I have provided the logicese equivalent of Thomson's definition. In logical syntax it reads:

x constitutes y at t =df

1) $x<y@t \ \& \ y<x@t \ \&$

2) $(\exists z)(z<x@t \ \& \ \Box(\forall T)(xE@T \rightarrow z<x@T) \ \& \ (\forall z')(z'<z@t \rightarrow \Diamond(\exists T)(yE@T \ \& \ \neg(z'<y@T))) \ \&$

3) $\neg((\exists z)(z<y@t \ \& \ \Box(\forall T)(yE@T \rightarrow z<y@T) \ \& \ (\forall z')(z'<z@t \rightarrow \Diamond(\exists T)(xE@T \ \& \ \neg(z'<x@T))))$

to y (condition 2). Finally, these criteria entail that Thomson's version of constitution is both transitive and asymmetric.[62]

In our example, Clay can be said to constitute Alfred because: 1) they are parts of one another, 2) there are parts of Clay that are essential to it, say, the hand part of Alfred, that are not also essential to Alfred, and 3) there are no parts of Alfred that are either essential to it, or which are essential to it and not also essential to Clay–indeed, any part of Alfred is essential to Clay when Clay constitutes Alfred at t. On Thomson's view then, as with Rea, the ontological difference between Clay and Alfred is that they are differently related to their parts. Alfred can survive a loss of parts while Clay cannot.[63]

B. Fusions

Coupled with, and important to, Thomson's understanding of constitution is her view regarding what she calls fusions. Indeed, constituting objects, in our example, Clay, are in every case fusions of some variety or other, generally what she calls all-fusions. Further, Thomson's picture of constitution entails a multi-level ontology; an ontology she motivates using the fusion relation. Thus, prior to offering a full account of Thomson's take on material constitution, one must flesh out her account of fusion relations.[64]

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[62] [98]: 157.

[63] At least not its macro parts, though, as we will later find, Clay *can* survive a loss of its micro parts.

[64] Indeed, Thomson herself deals first with the notion of all-fusions before fleshing out the fusion relation, and adding what amounts to an infinite number of fusion types, after providing a preliminary sketch of her picture of constitution but before giving her full-fledged view complete with a tri-level ontology.

On Thomson's view, some x all-fuses S, where S is the name given for some nonempty set of material objects, so long as two conditions are met. The first condition gives the existence criteria for x: necessarily x exists at a time t iff there exists a y such that y is a member of S and for all y if y is a member of S, then y exists at t. In other words, so long as all of the members of S exist at the same time, x, the all-fusion of the set, exists at that time as well. For example, the set whose membership consists of my key chain and five distinct keys exists at t, so the unique all-fusion of that set exists at t, as well. The second condition is also necessary *de dicto* and provides the part relationship of the fusing entity with the set that the entity fuses: y is a part of x iff both x and y exist and ultimately all parts of y are also parts of x.[65] For example, one might think of the set consisting of Mister Potato Head and the all-fusion of this set. Mister Potato Head has many parts, but these parts are also parts of the unique all-fusion. The upshot of these two conditions is that when x exists as the all-fusion of S, then every member of S must also exist and every member of S must also be a part of x and so must all of the parts of S's members be a part of x. Whenever both of these conditions obtain for any set S, there is a unique x that is the all-fusion of S.

On Thomson's view, all-fusion is a ubiquitous relation. For example, there is an all-fusion of every portion of clay. To put it another way, every portion of clay has an all-fusion of the set of its members, which are themselves, undoubtedly, portions of clay. So, recall Clay when a part of Clay is on the floor and a part of Clay is on the shelf. The

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[65] [98]: 158. Note that here parthood is asymmetrical, so it does not lead to counterexamples of the type mentioned earlier with regard to her initial definition of constitution.

portion of clay that is the all-fusion is the portion that has as its parts both the portion of clay on the floor and the portion of clay on the shelf. And this portion, this all-fusion, is another entity and has its own existence. In other words, for every set of material objects, S, for which there is a time at which all of S's members exist, there is an x that all-fuses S at that time. There are no further constraints. Thus, the all-fusion of the set of portions of clay that makes up Clay exists, but so too does the set whose membership is the chair on which I am now sitting, my cat named Berkeley who is currently lounging in a patch of sunlight, and the Kansas City Chiefs nerf football on my bookshelf. Since all of the members of this set exist at the current time, 2:15pm, there is an x such that x all-fuses that set and x exists. While Thomson admits that such entities–the all-fusion of the set I have just described and of any set whatever whose members exist at the same time–is a queer entity, she fails to see why such entities could not, indeed, do not, exist.[66]

All-fusions play a part in Thomson's account of constitution, so we will return to them a bit later both to further flesh out the ramifications of the relation for her view and for critical evaluation. Prior to doing so, however, it is important to note that all-fusions

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[66] [98]: 161. Indeed, she notes clear existence and parthood criteria that crosses all possible worlds. And while it is clear from the definition that not all sets will have an all-fusion, since a given set's membership may never all exist at the same time, it is also clear that, as Thomson points out, any nonempty set could possibly exist at the same time and so for all nonempty sets an all-fusion possibly exists which amounts to saying that there is a world in which that all-fusion, the all-fusion which results from that set's members existing at the same time, exists. And she sees "no metaphysical impossibility in the supposition that it does. Alternatively put: there is a possible world in which it does" (161). Moreover, Thomson notes that there is no empirically verifiable contingent matter of fact that would, if discovered, clearly indicate that some S cannot but fail to have its members existing all at the same time. In which case, since there is no empirically verifiable reason accessible to scientific investigation, to suppose that S has no all-fusion, Thomson sees no reason to suppose that it does not.

are not a unique kind of entity. In point of fact, all-fusions are joined in Thomson's ontology by a great variety of fusion entities. Take, for example, some-fusions. Some-fusions are the fusion entities that result from sets which have at least one member, though there could be many more members, that exists at some time. Since not all members of a given set must exist at the same time for some-fusions, every some-fusion resulting from a multi-membered set exists whenever one or more of the members of that set exist. Moreover, there is a some-fusion for every set with at least one existing member. Indeed, every set with only one member will have both an all-fusion and a some-fusion. Thus, for any given single-membered set there is the set with the one member, the member itself, the all-fusion of the set, and the some-fusion of the set. In other words, for such a set there exists the member, K, the set of K,[67] call it S, the all-fusion of S, call it AllK, and the some fusion of S, call it SomeK.[68]

Far from being disturbed by this bloating of ontology–at first blush, a needless bloating of ontology–Thomson continues. "Why not three-fusion?"[69] she asks. Three-fusions result from sets that have three members existing at the same time. Four-fusions,

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[67] If sets can be said to exist.

[68] [98]: 166-167. It should be noted that in some cases Thomson thinks that one or more of the various fusion entities are identical with other fusion entities or the members of the sets themselves. For example, with some-fusion Thomson notes that the some-fusion which results from any set with one member is identical with that set's member. But I fail to see how this can be so for, at the very least, the member, call it K, fails to have the property of being a some-fusion while the some-fusion, call it SomeK, has that property. I will say more about both Thomson's view and my critique of her view on this issue later.

[69] [98]: 167.

then, result from the sets that have four members, and so on. For any set with n-members existing at some time, there exists the n-fusion of that set. Existing numbered membership is not the only qualification that Thomson envisions for further fusion cases. She opens wide the door to her ontology by affirming the existence of such fusions as some-red-fusions, which are fusions of sets that have some members that are red at a particular time, though not all need be (at any particular time or ever) so any one red member will do. And then there is the following illuminating fusion: two-three-bears-fusion. This is the fusion of the set that has the following members: two members that exist at the same time, t1, and three members that by t1 have been eaten by bears.[70] In other words, any conceivable means of relating objects, no matter how contrived, is sufficient to create a new fusion relation and a host of fusion entities. While the existence of such entities is admittedly counterintuitive, Thomson thinks that there is "no good reason" to think that such entities do not exist, so she embraces their existence.[71]

While she realizes that there is a clear bloating of ontology as a result of her view, Thomson argues that the "ontological attic" is not as cluttered as it might first appear. For example, there are identities among some of the fusions.[72] Take a set which has three members that all exist at some time t. In such a case, the set has both a three-fusion and an all-fusion, and Thomson thinks that the all-fusion is identical with the three-fusion. Indeed, this does look plausible, at first blush. The fusion which results from the set

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[70] [98]: 167.

[71] [98]: 167.

[72] [98]: 167.

ThreeS is an all-fusion and at the same time a three-fusion, and so I suppose that it is conceivable that this fusion has the property of being an all-fusion and the property of being a three-fusion, though there is the possible difference in essential properties and/or persistence conditions that I will shortly address. So the all-fusion and the three-fusion share all of their properties, on Thomson's view, and are identical. This holds also for other fusion types like some-red-fusion if one of the members of the set ThreeS is red.

Thomson also notes that there are part relations among the fusions. For example, there is a part relation between fusions whenever there is an all-fusion because it will have a some-fusion as a part. And there are cases where all-fusions and some-fusions are parts of one another.[73] And, finally, there are times when fusions constitute other fusions. In fact, all-fusions can constitute some-fusions just when all the members of a given set exist. Here again we read Thomson's justification, in part, for her view. She wants to accept all of these fusion entities. She likens reality to an overcrowded attic. Some of the items are admittedly junk, but "there is no need to deny the junk; we can simply leave it to gather dust".[74] While Thomson may be right that there is no reason to deny the junk, I have yet to see any reason to affirm the junk, and it is just this sort of justification that is owed here.

C. Fusions Evaluated

Judith Thomson has suggested commitment to a mereological relationship she calls all-fusion in an effort to provide a viable account of another relation: namely, material

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[73] [98]: 167.

[74] [98]: 167.

constitution. All-fusion is not the only fusion relationship Thomson embraces, but it is the one of primary concern here. While it may have some use in Thomson's account of constitution, I think that there are several reasons to question commitment to a relation that entails the existence of such ontologically onerous entities.

First, it seems fair to ask whether or not Thomson's claims of identity, part, and constitution relations among the fusions significantly reduce the numbers of fusion entities. We must give serious pause before accepting her suggestion that many fusion cases are identical. Indeed, I doubt that there are many identities among the fusions at all. Take, for example, her paradigm case of the set ThreeS. It has an all-fusion, on her view, because all of the members exist at some time t, and it has a three-fusion as well since it has but three members. Thomson claims that these fusions are identical, so that, as far as we have gone in the fusion litany for ThreeS, there is but one fusion that exists related to this set. But we should not jump on Thomson's bandwagon too quickly. For it turns out that this set also has a some-fusion that exists just when one of the members of the set exists. And, we might suppose, it also has a some-red-fusion because one of the members of the set is red.

Regarding the some-fusion, if each of the members exist when and only when the other members exist, it looks like the some-fusion is also identical with the all-fusion and the three-fusion on her view and we still have but one fusion entity associated with the set ThreeS. But, it turns out that if just one of the members of the set exists for any period of time when the other two, or even just one other, fails to exist, call this time t*, the some-fusion and the all-fusion cannot possibly be identical. This is because the existence criteria

for some-fusions is far more loose than for all-fusions. Some-fusions exist just when any member of the relevant set exists, but all-fusions only exist when all of the members of the relevant set exists at the same time. Thus, in my example, the some-fusion would clearly exist at t* while the all-fusion would just as clearly fail to exist at t*. But, then, either the all-fusion and the some-fusion fail to be identical or it must be the case that the all-fusion both exists at t* and fails to exist at t*. The latter is obviously impossible, so the two are not identical. It follows that in such a case there will be at least two fusion entities related to the set. Moreover, the same holds for the three-fusion related to the set. The existence criteria of three-fusions are loose like those of all-fusions. Thus, in cases where the three members of ThreeS fail to exist at all and only the same times, there will be at least *three* fusions: the all-fusion, the some-fusion, and the three-fusion.

It is apparent, then, that even if Thomson's identity claim holds, it holds for few cases and so does not noticeably reduce the number of fusion cases mandated by her view. But even this slight reduction is in question, for it must be asked whether all-fusions will in every case have the property of fusing a particular kind of set. In other words, is it the case that an all-fusion has the essential property of fusing all members of a set at a particular time? This is a property that some-fusions fail to have, since only one member of any given set need exist in order for a some-fusion of that set to exist. Three-fusions operate differently. I suppose that they too would have something like the essential property of fusing all members of a set at a particular time. However, a three-fusion also has the property of necessarily fusing a set with three members which an all-fusion fails to have. In other words, even in Thomson's idealized case, the all-fusion and the three-

fusion fail to share all of their properties–the three-fusion has the essential property of fusing three-membered sets while the all-fusion fails to have that essential property–and so cannot be identical. Regardless, then, of what turns out to be the case with regard to part sharing and co-constituting, it is clear that Thomson's efforts to tidy what she calls a cluttered attic have failed. It is now time to look and see just how cluttered her attic has become.

As Thomson rightly notes, if we embrace all-fusions, we are then shackled with the existence of some very odd objects. Indeed, according to her own example[75], the chair in which I am now sitting and the front left leg of that chair is one set, and the chair in which I am now sitting and the front right leg of that chair is another set. Further, the chair in which I am now sitting is the sole member of the set whose membership is itself. Now, on Thomson's view, there is an all-fusion of the first set, there is also an all-fusion of the second set which cannot be identical with the all-fusion of the first set–the all-fusion's cannot be identical since the sets they fuse are not identical, i.e., they have different members–and the same is true with the third set; it is fused by an all-fusion which is not identical with either of the other two. So there are three fusion entities[76] in addition to the chair in which I am now sitting. Presumably all of these entities are spatially co-located. If the all-fusions are also chairs, then, since my chair is obviously a chair, there are (at

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[75] [98]: 160-161 and fn 9.

[76] Lest we think we have finished counting the all-fusions related to my chair I must quickly note that there is a large number of sets, perhaps an infinite number, associated with my chair, and Thomson is committed to the existence of an all-fusion relating to each one of them.

least) four chairs in the space occupied by my chair. This strikes many, including the majority of proponents of the constitution relation, as counterintuitive in the extreme. Hence, it would serve as a reductio of her view.

Thomson might respond that the all-fusion of the set whose sole member is my chair and my chair itself are identical. Such is apparently her driving assumption when she says regarding a different issue: "since the all-fusion of a set with only one member is that one member, we can reput our question as follows: can an artifact constitute an artifact?".[77] This is a troubling sentence, for it looks like Thomson claims here that the all-fusion of S, where S is the set whose sole member is some artifact, call the artifact K, is identical with K. But this result is counterintuitive, because surely the relevant all-fusion, AllSk, has a property that K does not possess–namely, the property of being an all-fusion–such that AllSk must be a different object than K. The relation, then, cannot be one of identity, but must be some other relation. It might be that Thomson is here using the *is* of constitution rather than the *is* of identity. But presuming that AllSk is an artifact and Thomson intends the constitution relation here, then the question she purports to address–can an artifact constitute an artifact–is self-evident, and she does not think that the answer to this question is self-evident.[78]

If artifacts cannot constitute artifacts, then it is either false that AllSk is an artifact or it is false that K constitutes AllSk, but then we still need an account of the relationship between the two. The only other obvious option is the fusion relation, but if this is

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[77] [98]: 164.

[78] [98]: 164.

Thomson's intended usage, then all that is happening here is that she is giving us yet another way to understand 'is': the is of identity, the is of constitution, and the is of all-fusion. But such an interpretation does not make sense of the aforementioned sentence, and the most obvious interpretation is that she is claiming that AllSk and K are identical. While I have doubts concerning this move, as mentioned above, even if we take my chair out of the equation–or, alternatively, the all-fusion that *is* my chair, on her view–there are still three chairs present where I am sitting–the three all-fusions that cannot possibly be identical–so we still have a problem.[79]

Thomson recognizes the counterintuitive nature of this result and offers some possible ways out of the dilemma. One way out is to deny that the all-fusions associated with the sets whose members are my chair and its right leg or my chair and its left leg are chairs. On this understanding, the only chair in the room is my chair, and, because identical, the all-fusion associated with the set whose sole member is my chair. Alternatively, Thomson suggests a change in how objects are counted. For example, one might just as well count by sets rather than things. If by sets, one might count "the number of sets, each of which has as its members all the things in the room at t that are chairs at t and that are parts of each other at t."[80] On Thomson's view, the three all-

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[79] In point of fact, there are more than three chairs where my chair now rests, considerably more. For, on Thomson's view, there is an all-fusion for any set, S, whose membership exists at the relevant time, and, given her liberal interpretation of what can count as members of sets, it appears clear that there is an infinite–or something very close to an infinite–number of sets related to my chair, so all-fusions, so chairs.

[80] [98]: 168.

fusions are all parts of one another. Thus, though there are three all-fusions at t, and so three things at t, there is but one chair *there* at t.

So, even she remains committed to a fair number of entities that have separate existence and are fairly odd things indeed: namely, each of the three all-fusions. Moreover, this problem is not restricted to my chair and the various sets that one can dream up that are related to it, i.e., that have it as one member. The set whose members are the quarter in my pocket and the quarter in your pocket also has an all-fusion. Further, if all-fusions can be members of sets, then Thomson is committed to the existence of all-fusions of all-fusions, or what we might call second-order all-fusions. I fail to see why fusion entities cannot be members of sets, on Thomson's view, and in fact she appears to embrace such second-order entities[81], though their function and general *raison d'être* is unclear. Surely such a bloating of ontology requires some justification, but none is forthcoming. While Thomson continues to be on the lookout for any good reason to reject the all-fusion relation–and her many other fusion relations–it looks as though (at least) one has been found. The consequences outlined here provide good reason to reject the entities in question, and so the relation(s) that breeds them.

Of course, Thomson might contend that this amounts to an incredulous stare. Incredulous stares were not enough to debunk David Lewis' possible worlds and I doubt such would suffice for Thomson's fusions. As luck would have it, however, the oddness of the fusion entities is not the only reason why one ought to give pause prior to accepting them and the relations that give rise to them. There are other concerns. While Thomson

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[81] And if second-order entities, then also any n-order entities.

has provided some information regarding the nature of all-fusions, she owes still more. For example, it is unclear whether or not all-fusions are material objects, and if so, whether artefacts or natural kinds. Further, it is unclear what we are to make of the following statement: "every thing is the all-fusion of at least one set, namely the set whose sole member is itself".[82] On the one hand, this could mean that for all x, if x has existence, then it has an all-fusion. If so, what is the relationship between the all-fusion and the thing itself? Surely appeal to a set whose membership is that thing does not create enough ontological space to warrant *another* object that is over and above that thing![83] On the other hand, Thomson might mean that for all x, if x is a thing, then x is also an all-fusion of the set whose sole member is itself.[84] In this case, the set, S, would have as its sole member object x, but because S has a member that exists at t, it also has an all-fusion, y, such that y all-fuses S at t. But, then, y just is x, on this interpretation. The all-fusion, y, is dependent for its existence on the non-empty set, S. S is dependent for its existence on x. However, x just is the all-fusion, y. A puzzle remains, then, over the dependancy relationship between x, y, and S, but also over what value, if any, is added to x when it becomes the all-fusion of the set whose sole member is itself.[85]

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[82] [98]: 159.

[83] Once again, whatever they are, all-fusions are not sets, so that there is no help in that direction.

[84] As noted above, this does appear to be her view.

[85] On a related note, since Thomson sees no metaphysical impossibility in the supposition that all nonempty sets have an all-fusion in some possible world, what does this mean for unicorns? Or Santa Claus? In other words, what, on her view, counts as a nonempty set? Is the set of all unicorns empty or nonempty? If nonempty, what makes it

Finally, Thomson raises the issue of science and scientific investigation and notes that no manner of scientific investigation can falsify her view. While this is obviously true since her fusion view amounts to a metaphysical thesis that is justified solely on a priori grounds, it is not clear how one should take the claim. Thomson thinks that what follows is that one has no good reason to reject her view.[86] While this is a clear attempt at justification for her view, it fundamentally begs the question: namely, what reason we have for affirming the view in the first place. In the final analysis, when it comes to justification for the view, we are left wanting more. There is no explanatory power that all-fusions provide and that makes our supposition regarding their existence warranted–indeed, explanatorily essential. Moreover, there are no causal properties that these new objects have such that we cannot explain everyday, ordinary phenomena without them. Instead, we learn that there is no amount of scientific investigation that can prove that fusion entities fail to exist, but, while true, this no more warrants the existence of fusion entities than it does Cartesian souls. What is owed is a positive argument for the existence of such objects, and no such argument has been forthcoming. Thomson has provided a definition with clear existence and persistence criteria and a class of relations that entail the existence

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nonempty? On some interpretations, the set of all unicorns is an empty set because there are no unicorns, in the actual world or any other possible world, and so there can be no extension to the set of all unicorns. Is this the same for Thomson or is she committed to an extension for all such sets of nonexistent-qua-actual-world objects? This ultimately boils down to a question regarding Thomson's view of the relationship between set membership and possible worlds. At the very least Thomson owes us clarification here lest an acceptance of her fusion thesis commit us to a particular possible worlds metaphysic.

[86] [98]: 161.

of fusions if true, but saying it simply does not make it so. She cannot argue for the existence of such queer objects by mere definition alone.

D. Thomson's Tri-level Ontology

Thomson uses the all-fusion relation to differentiate between masses of atoms, clay portions–or portions of clay–and statues. With the all-fusion relation, Thomson defines a mass of atoms as follows: x is a mass of atoms =df. for some set of atoms S, x all-fuses S.[87] The mass of atoms is related to the collection of atoms in ways consistent with what has been said above, though there may be some worries regarding the nature of collections and/or aggregates, etc.. For our purposes it is enough that the all-fusion of a set of atoms just is the mass of atoms.

With the addition of masses of atoms, Thomson thinks she has provided a three-level ontology. In our example, there is the statue, Alfred, the portion of clay, Clay, and the mass of (clay) atoms. Since the persistence criteria for masses of atoms is quite tight, we might name the mass something like, $\text{AllS}_{\text{atoms,clay,2pm}}$, which indicates that the named object is an all-fusion of the set of clay atoms in existence at 2pm. With statues she notes that continuity of shape is what matters for persistence. For the other two, Clay and $\text{AllS}_{\text{atoms,clay,2pm}}$, continuity of matter determines persistence, but for Clay the relevant matter is its macromaterial parts–Clay can survive micromaterial change–and for

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[87] For the existence of such all-fusions she gives the following rationale: "Are there such things? I can see no good reason to think there are not" ([98]: 161), which is consistent with what she says regarding fusion entities in general.

$AllS_{atoms,clay,2pm}$ the relevant matter is its micromaterial parts, since any change in atomic membership entails loss of existence.[88]

On Thomson's view, constitution is what relates the three entities. $AllS_{atoms,clay,2pm}$ constitutes Clay at 2pm–alternatively, $AllS_{atoms,clay,t}$ constitutes Clay at t–and Clay, in turn, constitutes Alfred at 2pm. Because constitution is transitive, $AllS_{atoms,clay,t}$ also constitutes Alfred at t, but because constitution is asymmetrical, Alfred does not constitute either $AllS_{atoms,clay,t}$ or Clay at t. In our earlier example, supposing that time t is the time prior to the replacement of Alfred's hand and t* is the time after the replacement of Alfred's hand, all three entities–$AllS_{atoms,clay,t}$, Clay, and Alfred–are on the shelf at t, but at t* only Alfred is on the shelf. Clay still exists, though partly on the shelf and partly on the floor, while $AllS_{atoms,clay,t}$ has ceased to exist, though $AllS_{atoms,clay,t*}$ exists, again, partly on the shelf and partly on the floor.

Thomson notes that intuitions may differ with respect to the persistence criteria of portions. In order to make the tri-level ontology work uniformly across portions, then, where intuitions go contrary as to whether or not a portion of x can survive the loss of a single atom–it is obvious with clay that it can, but it may be less obvious with other mass-kinds, e.g., gold, water, etc.–she stipulates that any portion is such that it can persist through the loss of an atom so that micromaterial constitution is not relevant for portions. The same does not hold, of course, for masses, none of which can survive even the exchange of one atom. Due to this stipulation, Thomson further notes that some x is a

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[88] [98]: 162.

portion only if it can instantiate shape-constrained temporary properties. Thus, portions are what immediately constitute artifacts.

3. Thomson's View Assessed

Thomson's Tri-level ontology, made possible by her commitment to the fusion relation, coupled with her version of the constitution relation allows her to answer puzzles raised by the problem of material constitution. Thomson's account works for non-natural kinds, though there is some disagreement over whether or not it works for natural kinds.[89] Even so, it comes at a high price. A price that is too dear to pay unless there is no other way to answer the constitution puzzles.

First, Thomson is guilty of a bloated ontology which is in desperate need of population control. Her commitment to all manner of fusion entities amounts to the ontological equivalent of the Big Bang, an explosion in the population of metaphysical entities for which she provides no positive justification. What she offers is plenitude when what is called for is paucity–that is, unless and until a positive argument for the plenitude of fusions is offered.

Admittedly, Thomson recognizes the counterintuitive nature of her mereological Big Bang, but argues that her ontological attic is not nearly so cluttered by the explosion of fusion entities if one pays close attention to the identity, part, and constitution relations that hold among them and between them and garden-variety, everyday objects. However,

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[89] For her part, Thomson thinks that it does (cf. [98]: 169) but Lynne Rudder Baker is not so sure (cf. [2000]: 181, especially fn. 27).

while Thomson claims that in some cases fusions are, for example, identical, I have argued that such claims are exceptions to the rule rather than the rule of thumb.

Second, though Thomson rightly notes that no manner of scientific investigation will ever serve to disprove the existence of fusion entities–namely, because fusion entities exist, if they do, purely by virtue of definition within one's metaphysic and so are a priori known to exist if at all–this fact proves neither that fusions fail to exist nor that they exist. What is owed, then, is a positive argument for their existence. Given that they are theoretical entities, one ought not to expect their existence to be proved by either a microscope or a telescope. Even so, one might expect some positive account that highlights either explanatory importance or causal efficacy. Neither has been forthcoming from Thomson.

One might argue that some measure of explanatory justification has been provided, though admittedly not in any obvious way, simply by their necessary inclusion in her response to the problem of material constitution. Two items here are worth noting. First, it is true that fusion entities play an essential role in Thomson's constitution view. Thus, if fusions are cast in doubt, so, too, is Thomson's version of constitution. Second, not all of Thomson's fusions, it would seem, are essential to her theory of constitution. However, given her account of fusion entities, she is in a tough spot and must bite the proverbial bullet. In other words, given how Thomson has developed the fusion relation(s), if she accepts one of them, she must accept them all–justified or no. Unless fusions come to serve some obvious and essential explanatory function or there is justification provided for

their existence that amounts to more than mere definition, we are forced to dismiss Thomson's view.

All of this either explicitly tells against her view or gives us cause to search for a more acceptable account of material constitution. While there is strong reason to reject Thomson's view outright, if another account of constitution can be found that costs less, metaphysically speaking, than Thomson's view, then even the extremely limited benefit that her view provides, namely, a workable account of the constitution relation, will be nullified. It is in an effort to continue that search that we turn now to the work of Lynne Rudder Baker.

Chapter 4

Properties on Loan

I. Chapter Introduction

Lynne Rudder Baker has recently offered a novel interpretation of the constitution relation.[1] Unlike Judith Thomson's interpretation, Baker's does not rely on mereological relations to define constitution. Rather, Baker focuses on properties and the sharing of those properties among constituting objects. The sharing of properties by constituting entities with their constituted cousins is commonplace among constitution theorists. However, to this "bottom-up" property sharing Baker adds the notion of "top-down" property sharing. In other words, on Baker's view constituted entities also share properties with their constituting cousins.

In this chapter I spell out Baker's version of material constitution, highlighting her unique view on the mutual borrow-ability of most properties, including kind properties, by constitutionally related entities, then I offer a critique of her view which will focus on her downward property borrowing thesis and her related understanding of object individuation and counting. Ultimately, I show that Baker's argument by example in favor of her view is insufficient to motivate the view in light of alternate, plausible interpretations of those examples, that there are unacceptable consequences of her view, and that there is no reason to accept those consequences since the problems that her view is supposed to

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[1] Lynne Rudder Baker [2000]. See also, [97]: 599-621, and [99].

resolve either remain unresolved by her view, can be resolved through other, less controversial, means, or both.[2]

II. Lynne Rudder Baker: Constitution and Property Borrowing

In order to set the stage for Baker's view, it is useful to address a few preliminary issues. Baker uses several examples to tease out the constitution relation–statues, discs, persons–but I will primarily concern myself with her statue examples, specifically Michelangelo's *David*. Moreover, it is important to note that she takes David to be a three-dimensional, enduring object, as opposed to a four-dimensional, perduring one.[3] In addition, since the constitution relation raises identity concerns, it is important to note Baker's take on the identity relation. She makes it clear that when she speaks of identity she is speaking of identity in the strict Leibnizian sense and, further, on her view identity is rightly construed as a necessary relation. She does not find it essential to address contingent or relative identity, or any other kind of "faux" identity.[4] As such, a difference in modal properties will be sufficient to prove a difference in objects. With these preliminaries to the side, we are now prepared to stake out Baker's view.

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[2] I do not finish the last portion of this thesis until Chapter 5.

[3] [2000]: 29.

[4] Since Baker holds that identity is a necessary relation, she denies the possibility of contingent identity, and questions whether or not the notion of relative identity is even coherent (see [2000]: fn. 13). For this and related issues see also Peter Geach, "Identity" Logic Matters (Oxford, England: Basil Blackwell Pub., 1972): 238-249. And for criticisms of relative identity: John Perry, "The Same F", *The Philosophical Review* 79 (1970): 181-200, and David Wiggins [80]. Baker also favorably notes Saul Kripke's position on this issue, cf. "Identity and Necessity" in Identity and Individuation, edited by Milton K. Munitz (New York, NY: New York University Press, 1971).

1. Baker's View

Perhaps not surprisingly given our survey of the literature to this point, Baker's primary example when teasing out her view of the constitution relation is that of a statue, Michelangelo's *David*, and its constituting matter, a piece of marble. For ease she names the piece of marble–David is already named–Piece, though she recognizes that to do so is rather odd.[5] As we have seen already, there are multiple contenders for the property(ies) with respect to which the constitutionally related objects are said to differ. Baker offers as her example of the difference in properties between David and Piece the property that David has of being a piece of art essentially, which is a property that Piece lacks since Piece can exist in a world without art. In other words, there is no world in which David exists and there is no art, but there are such worlds for Piece.[6]

Thus far we are in familiar territory. In setting up the problem, Baker places her position in the light of recent debate on the relationship between objects: "Either x is identical to y or x and y are separate entities, independent of each other".[7] Since David and Piece fail to share at least one property, then, they are not identical and must be separate entities. But, Baker contends, this is not the only, nor the appropriate, result, and

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[5] Though also justified or at least not problematic, [2000]: 29, fn 9.

[6] Baker recognizes that this move on her part is ultimately to affirm that essential properties, e.g., of being a statue or being a piece of art, may be extrinsic and relational–and she notes that this is a place where she departs from a traditional understanding of Leibniz' Law as put forward by Robert Sleigh in his article, "Identity of Indiscernibles" in A Companion to Metaphysics, edited by Jaegwon Kim and Ernest Sosa (Oxford, England: Basil Blackwell, 1995): 234, ([2000]: 30 fn 10).

[7] [99]: 144.

she is careful to place her position in between the two extremes of identity and complete separation. In other words, while x and y are not identical, neither are they wholly separate entities that are independent of one another.[8]

Thus, even though it is clear that Piece and David are not identical, it is equally clear on Baker's view that Piece and David are not independent individuals. For, various of David's properties clearly depend on Piece's physical properties–e.g., the aesthetic quality of David having pent-up energy, which is dependant on the weight distribution and physical structure that Piece possesses.[9] In addition, the fact that they are co-located in space and time, at least since 1504 C.E., serves as further evidence of their close relationship as does the similarity among the vast majority of their properties: smell, color, weight, shape, etc. Notwithstanding the clear dependence and similarity, however, Baker argues that we cannot consider Piece as a proper subpart of David, because it is clear that Piece plus something else is not identical with David. There is nothing that one could add to Piece that would then result in a conjunction of proper subparts that is then itself identical with David.[10] Thus, David and Piece are neither identical, nor separate and independent, nor related as part to whole. Rather, the relationship between Piece and David is one of constitution.

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[8] Here the dependency claim is important because, in fact, she is committed to separate entities of a sort as we will soon see and will discuss in § 3.1.

[9] [2000]: 31.

[10] [2000]: 31.

David, then, is constituted by Piece, but is not identical with Piece. Piece could exist in a non-art world while David could not. In addition, both David and Piece could exist without the other, though David could not exist without being constituted by some piece or other while Piece could exist without constituting some statue or other, or, indeed, any other kind–artifact or natural. This relationship between objects, the constitution relationship, abounds in particular with respect to everyday, garden-variety objects, and while I have already noted the same constituent matter could serve to constitute various and sundry different objects–e.g., the same aggregate of bricks could constitute either a schoolhouse or a courthouse, whether in the same physical structure or not, and the same courthouse or schoolhouse could be constituted by a different aggregate of bricks, or perhaps not bricks at all–Baker points out that on her view there are some limitations to what can constitute what, e.g., David could not have been constituted by a 12 centimeter chunk of jade even though Michelangelo might have carved it. Here Baker takes a Kripkean turn and names David. Then, she claims that David, designated by baptism in the actual world, could not have been a 12 centimeter jade statue even if the artist were the same. She also notes that her car could not be constituted by a soap bubble, because such things have insufficient sticking power, in terms of their existence, to

constitute automobiles.[11] Thus, while she allows that constituting objects are not, in the particular, essential to objects constituted, she also argues for some limitation.

Recognizing a need to move beyond mere intuitions on this and other issues with respect to the constitution relation–especially in an effort to show just when two objects bear the constitution relation with respect to one another–Baker offers her version of clear necessary and sufficient criteria for the relation. In so doing, she makes use of three technical concepts that require brief explanation before giving her definition. To say that an object is in G-favorable circumstances is just to say that the object is in the relevant environment that would give rise to a G kind. To say that an object has G* is just to say that G is the object's primary-kind property and is possessed by the object non-derivatively.[12] To say that an object possesses a property non-derivatively is just to say that its possession is not dependent on its constitution relations. I will say more about

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[11]And Kripke's lectern could not be constituted by a block of ice. Here she agrees with Kripke's conclusion, but not for his reason. In a footnote, she distinguishes her view from Kripke's origin essentialism. Kripke argues that the lectern he is in fact using could not be made from a block of ice because origins are essential to a thing. Baker denies that origins are essential but argues for Kripke's conclusion in the case of the lectern based on the fact that in normal everyday circumstances lecterns made out of blocks of ice could not function satifactorily as a lectern since it would melt too quickly. Her words: it would be unable to "play a lectern role in our climate" ([2000]: 32, fn. 18). See also Saul Kripke, Naming and Necessity (Cambridge: Harvard University Press, 1980).

One wonders whether sticking power is the only concern for cars made out of soap bubbles–perhaps the average weight of American drivers would also dampen the excitement this idea might otherwise create in the motor city–and whether the Penguin of Batman fame might not get along famously with a lectern made of ice. Even so, this concern is outside the scope of this dissertation, so I will not raise it further here.

[12] 'G' will stand in for any kind whatever and '*' will indicate primary kind for any kind whatever.

each of these concepts shortly. But this will suffice for now so that we may take a preliminary look at Baker's view.

x constitutes y at t =df

1. x and y are spatially coincident at t; and

2. x is in G-favorable circumstances at t; and

3. It is necessary that: for all z, if z has F as its primary kind (and non-derivatively) at t and z is in G-favorable circumstances at t, then there exists another object, u, such that u has G as its primary kind (and non-derivatively) at t and u is spatially coincident with z at t; and

4. It is possible that: x exists at t and there does not exist another object, w, such that w has G as its primary kind (and non-derivatively) and w is spatially coincident with x at t; and

5. If y is immaterial, then x is also immaterial.[13]

The first condition, the requirement for spatial coincidence, is standard for constitution theorists. The immateriality relationship, condition five, however, is not commonly found in the literature. While some leave open the possibility of constituting relations among

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[13] [2000]: 168. In logicese/logical syntax:
x constitutes y at t =df
1. x and y are spatially coincident at t; and
2. x is in D at t; and
3. It is necessary that: (z)[(F*zt & z is in D at t), then ∃u(G*ut & u is spatially coincident with z at t)]; and
4. It is possible that: (x exists at t & ~∃w[G*wt & w is spatially coincident with x at t]); and
5. If y is immaterial, then x is also immaterial.

immaterial things[14], Baker holds that properties are nonspatial parts of constituted objects. In other words, on her view there are both material and immaterial parts that constitute objects, e.g., the statue.[15]

With conditions two through four, Baker commits herself to what I call the emergence of objects: "When certain things with certain properties are in certain circumstances, new things with new properties come into existence".[16] For example, a stone or collection of stones put into a certain circumstance becomes a monument. She thinks that the set of stones then acquires new properties, and that some of these properties are causal properties while others are kind properties. This is significant because the pile of stones, or, rather, the monument[17], now causes persons to gather on certain holidays, brings tears to persons' eyes, serves to arouse protest, etc.. Baker does not argue that there is any intrinsic, nonrelational property that the monument has but that

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[14] For example, Judith Thomson.

[15] [2000]: 43. I will not say much on this issue here since it is not an essential element of her view. One could just as easily leave room open for immaterial parts without entertaining a commitment to their existence.

[16] [2000]: 32-33.

[17] In this example, Baker focuses on the stones–i.e., these causal properties come into being when the stones enter a new circumstance. However, given the quote earlier and her conditions for constitution, these causal properties come into being just when a new thing, that is, the monument, comes into being. And the monument is clearly, on Baker's view, *not* just the collection of stones. Thus, Baker does not say what she should say here and is, at least to this point, blurring the boundaries between the two objects, which is not wholly surprising given her commitment to her non-separateness thesis. It seems clear, then, that she would not embrace my description of "object emergence" for her view, though I think she is committed to such emergence. Also at issue here is her property borrowing thesis which will be addressed shortly.

the pile of stones lacks or vice versa. She rests her claim that the pile of stones and the monument are not identical on the difference in terms of their extrinsic, relational properties: namely, that of *being a monument* or of existing only in worlds which give rise to monuments (e.g., where intensional beings exist, appropriate social constructs obtain, etc.).

But these results fall directly out of conditions two-four. The pile of stones is in monument-favorable circumstances, satisfying condition two. Necessarily, whenever piles of stones are in monument-favorable circumstances, there exists another object that is a monument and that is spatially coincident with the stones. On the assumption that monuments and piles of stones are primary kinds, this satisfies condition three. Finally, it is possible that the stones exist and there is no additional object that is a monument and is spatially coincident with the stones–namely, just when the stones are not in monument-favorable circumstances–thus satisfying condition four.

David and Piece also fit the conditions Baker outlines. At the time in question they are spatially coincident (condition one). Piece is also in an artworld, shaped by an artist, Michelangelo, in a particular way, and put on display (condition two). We might also stipulate that necessarily whenever things, like pieces of marble, are put in these circumstances, there are other things, like statues, that are coincident with them–Piece and David, respectively, fit this condition in our example (condition three). However, it remains possible that Piece exists without David's existing–in a nonart-world, for example, since existing in an art-world is an essential property of David but not of Piece (condition four). Finally, neither David nor Piece is immaterial (vacuously satisfying condition five).

Concerning the formal properties of the relation, Baker holds that constitution is nontransitive, irreflexive, and asymmetric.[18] She further thinks that the constituted object has ontological priority over the constituting object: "If x constitutes y at a certain place and time, then there is a unified individual at that place at that time, and the identity of that individual is determined by y".[19] This is one of those places where Baker's position is less than clear in part, I think, because she appears to affirm two mutually inconsistent views.[20] Even so, she appears to say that so long as x constitutes y, y "encompasses" or "subsumes" x: "the identity of the constituting thing is submerged in the identity of what it constitutes".[21] And finally, Baker takes the relevant related objects to be individuals as opposed to stuffs or masses.[22]

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[18] [2000]: 44-46.

[19] [2000]: 33.

[20] Namely, that x and y are different, spatially coincident objects *and* that there is one "unified individual" present there at t. I return to this issue later.

[21] [2000]: 33. Admittedly, this is all very metaphorical, and while Baker promises elaboration, the first step in that direction just brings further confusion. She writes that "constitution is a contingent relation between *individual* things" (33, emphasis in the original). But this claim that there are two individuals in the constitution relation is in sharp contrast with the claim I have just noted in the text that there is but one unified individual and the constituted entity is it. Ultimately, as I understand it, these metaphors stand in for some of the more technical parts of her view–e.g., property borrowing, property derivation, primary-kind properties–as such we must take an extended look at these technical elements before we can hope to understand the metaphors. Even then the outlook is bleak.

[22] Contra both Judith Thomson [98] and Dean Zimmerman, "Theories of Masses and Problems of Constitution", *Philosophical Review* 104 (1995): pp. 53-110, and "Coincident Objects: Could a Stuff Ontology Help?" *Analysis* 57(1) (Jan. 1997): pp. 19-27.

With these considerations, Baker notes that her understanding of constitution differs in important ways from the kind of constitution that, for example, Dean Zimmerman argues against in his article "Theories of Masses and Problems of Constitution". Zimmerman takes the relata to be "masses of kinds of stuff" and he permits the objects to constitute one another, which Baker does not allow–as already seen, Baker argues for an asymmetrical constitution relation as opposed to a symmetrical constitution relation. Zimmerman ultimately decides that coincident physical objects are not possible[23] and Baker thinks that she slips away from his conclusion because of her symmetrical view regarding the sharing of properties, and the rejection that essential properties must be intrinsic to a thing.[24]

As it is stated, Baker's five-part criterion for constitution makes use of two additional concepts related to property possession: property possession that is independent of constitution relations and property possession that is dependent on constitution relations. On Baker's view, "there are two ways to have a property, nonderivatively and derivatively".[25] This distinction is central to her view and her defense against certain

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[23] [95]: 90.

[24] [2000]: 32. Regarding essential properties, Baker indicates that her position entails the following five principles: 1) everything that exists and that is not eternal has essential properties; 2) some things, e.g., artworks and artefacts, have relational properties essentially; 3) some things, again, artefacts and artworks, e.g., have intentional properties essentially; 4) some things, same examples, have properties whose instantiation depends on convention, language, or other aspects of a culture, essentially; and 5) one thing may have a certain property essentially while another thing may have that same property contingently ([2000]: 35-39).

[25] [2000]: 55.

detractors.[26] The latter, derivative possession, allows for property sharing (or borrowing) while non-derivative property possession makes sense of property exemplification that is independent of constitution relations. The formal conditions are stated below with (I) standing for the independence, or nonderivative, condition and (D) standing for the dependent, or derivative, condition.

(I) x has H at t independently of x's constitution relations to y at t =df

(a) x has H at t; and

(b) Either (1) (i) x constitutes y at t, and

(ii) x's having H at t (in the given background) does not entail that x constitutes anything at t.

or (2) (i) y constitutes x at t, and

(ii) x's having H at t (in the given background) does not entail that x is constituted by something that could have had H at t without constituting anything at t.

(D) x has H at t derivatively =df there is some y such that:

(a) it is not the case that x has H at t independently of x's constitution relations to y at t; and

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[26] Cf. [2000]: 169ff. See also: Burke [1992] and Zimmerman [1995].

(b) y has H at t independently of y's constitution relations to x at t.[27]

So, for example, David has the property of being a statue independently (non-derivatively) of its constitution relations with Piece because Piece could not have the property of being a statue without constituting David (condition Ib2). In addition, Piece has the property of being a statue dependently (derivatively) because Piece does not possess that property independently of its constitution relations to David while David does possess the property independent of its constitution relations to Piece. Also known as top-down property borrowing, this is one of the, if not the, most novel features of Baker's version of the constitution relation. As such, we will take some time to work through the salient features of this concept.

2. Property Borrowing Demystified

Property borrowing, or sharing, among numerically distinct objects is but one way in which objects might be said to acquire properties. Property acquisition is the primary issue in the borrowing (or sharing) concern of Baker and other constitution theorists. What might be called bottom-up property borrowing is a ubiquitous concept among such theorists. Intuitively, this is the view that constituted objects "borrow" certain properties, e.g., shape, weight, color, etc., from their constituting cousins. Top-down property borrowing, however, is unique to Baker's view.

As Frederick Doepke, among others, has made abundantly clear, the person who argues that a statue, David, for example, is not identical to the piece of marble (or

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[27] [2000]: 169.

whatever) out of which it is made must account for what turns out to be an impressive similarity in properties given their numerical distinctness.[28] In answer, constitution theorists maintain that constituted objects borrow or share properties in virtue of their constitution relations. In other words, constituted objects, like David, possess many, though not all, of their properties by virtue of their constituting pair, like Piece. While many of the constituted objects' properties are derived from their constituting pair, not all are so derived. For example, David derives its weight from Piece, though not its kind.[29] Further, while many of the properties of the constituting object will be shared with the constituted object, not all will be shared. For example, Piece shares properties related to weight, color, etc., though not its essential relations to its micro-parts.

This bottom-up property borrowing from constituting objects to constituted objects accounts for much of the vast similarity among constitutionally related objects: e.g., the similar physical characteristics. As such, it is quite plausible and has proven sufficient for most constitution theorists, but Baker argues that the other direction, top-down property borrowing, is also necessary. On her view, constituted objects also share certain of their properties with their related constituting objects. The top-down thesis is far less intuitive, and, so far as I know, only Baker holds it. Thus, she owes us some justification for this controversial thesis.

Baker offers several arguments in favor to top-down property borrowing. Since I deal extensively with this aspect of Baker's view in the next section, I mention only briefly

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[28] Doepke [82].

[29] Baker would use the term 'primary kind' instead of kind.

one of her arguments here so as to better flesh out her view. With regard to David and Piece, Baker offers the following counterexample to the only bottom-up borrowing thesis. She suggests that the value of the statue, appraised, say, at $10,000, is also a property that the constituting entity, our piece of marble, possesses by virtue of its relationship with the statue. It is counterintuitive in the extreme, in Baker's opinion, to suggest that while David is valued at $10,000, Piece is valued at a mere $50. In addition, Baker thinks that the two direction borrowing thesis helps counter various objections raised by those who want to argue that there is no constitution without identity.[30] Thus, she offers two kinds of argument in favor of top-down property borrowing: argument by example and argument to the best explanation.

As one might guess, there are limitations to the borrowing thesis–both bottom-up and top-down. According to Baker, property borrowing does not range over the following three types of properties: alethic properties, which are properties that include modal terms in their English expressions–properties which are modal by nature, e.g., property of being a statue essentially (something that David has and cannot share with Piece); constitution or identity properties, where they are properties that say something about a thing's identity, as in identical to x or self-identity, or constitution relation, as in constitutes x or is constituted by x or is constitutionally related to x (e.g., Piece has the property of constituting David and cannot share that property with David); and properties

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[30] [99: 152]. The key, of course, is to determine if in fact top-down borrowing is useful in itself when countering those objections and what it adds to one's ability to counter those objections that one would not have otherwise. I will consider this at length in the next section.

that are rooted outside the times in which they are had (temporal properties, e.g., at time t, x has the property of being in Milwaukee at t1–at time t this is a property x has that is rooted outside that time at which it is had, namely, t). Baker notes that such kinds of properties can never be possessed derivatively[31], though constitutionally related objects will share all of their "ordinary" properties.[32]

As she notes, on her construal of constitution the following is a consequence: "necessarily, if x has constitution relations to y, and x has one of these noninheritable properties, then x has the property nonderivitively and y does not have it at all, derivatively or nonderivatively".[33] This means that so long as there is some constitution relationship between x and y–it does not matter which way it goes–and so long as one of the objects, x or y, has one of these noninheritable properties, then not only is it the case that one of the objects, say, y, must fail to inherit the property, y cannot possess the property at all. One of the more novel, and perplexing, aspects of Baker's borrowing view has to do with what types of properties *are* borrowable among constitutionally related objects. Noteworthy among the many properties that are borrowable: kind properties.

As we have seen, Baker holds that "there are two ways to have a property, nonderivitively and derivatively".[34] This holds true for kind properties just as it does for properties dealing with a thing's physical characteristics. With respect to our example of

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[31] [99]: 152. See also [2000]: 48-49.

[32] [2000]: 178.

[33] [2000]: 55.

[34] [2000]: 55.

David and Piece, then, Baker holds that David is a statue and is a statue non-derivatively and that Piece is also a statue but is a statue derivatively. In other words, Piece is a statue and has borrowed that kind property from David. David is also a statue but has not borrowed that kind property from Piece, or from anything else–David possesses the kind property of being a statue on its own.[35] To make this somewhat more clear, Baker offers the following distinction. Kind properties, or what she calls primary-kind properties[36], may be possessed derivatively or non-derivatively: "for any primary-kind property being an F, if any x is an F at all, then either x is an F essentially or x borrows the property of being an F from something to which x has constitution relations".[37] This helps somewhat, but elsewhere she defines primary-kind properties in relation to having a kind essentially[38], while it looks like here she suggests that one can borrow primary-kind properties. These two claims are in tension, in light of her view on the limitations of property borrowing. If primary-kind property possession entails that one have it, the kind property, essentially,

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[35] [2000]: 54. Of course, if Piece is not a statue at all, then it cannot be a statue derivatively. If I can show in the next section that Baker has not given us any uncontroversial examples of derivative properties, such as that had by pieces, statues, bodies, etc., and that the problems raised by material constitution can be explained without positing top-down property borrowing, then we have no reason to think that downward property sharing (borrowing) is motivated.

[36] The relationship between kind properties and primary-kind properties is easily confused in Baker's view and yet this is one of the more crucial elements of her theory. In what follows–both here and in the next section–I will make every effort to clearly articulate the relationship.

[37] [99]: 156. And elsewhere: "for any primary-kind property, being an F, if any x is an F at all, then either x is an F essentially, or x has the property of being an F derivatively" [2000]: 56.

[38] [97]: 618.

then clearly it cannot be borrowed since it is a type of property that is nonborrowable. On the other hand, if it does not entail that one have the property essentially, then we are left to wonder what a primary-kind property is over and above a kind property.

Baker, however, does not intend that primary-kind properties entail essential properties, only that they sometimes entail necessary exemplification. She writes, "for any primary-kind property, being an F, if any x is an F at all, then either x is an F essentially, or x has the property of being an F derivatively".[39] While this is somewhat confusing, Baker seems to say that properties are had in different ways and the ways of having properties does not imply a difference in the kind of property; rather, it implies a difference in terms of that property's exemplification (i.e., across all worlds or only in some worlds). Further, she ties together the notions of derivative/nonderivative possession and nonessential/essential property expression. One has a property essentially iff one has that property nonderivitively, and one has a property derivatively iff one has that property nonessentially. Thus, an object's primary-kind property, when possessed nonderivatively, entails that the related primary kind is essential to the object, and when the primary-kind property is possessed derivatively it entails that the related primary kind is not essential to the object.

In sum, Baker's view amounts to the following. Let being an F be x's primary-kind property and being a G be y's primary-kind property where being an F is not identical to being a G. Further let D be G-favorable conditions, and let F* be the property having the property of being F as one's primary-kind property and let G* be the property of

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[39] [2000]: 56.

having the property of being G as one's primary-kind property. And here the reason to distinguish F* and G* from F and G is that some objects may have F derivatively, and so have the property being an F derivatively, in which case x is an F but being an F is not its primary-kind property and so x is not an F*.[40] Now, when x is in D, y exists. Object x has F and F* while object y has G and G*, but additionally x borrows G from y and y borrows F from x[41], though neither G* nor F* are borrowable. Nevertheless, while one can make sense of the view, it remains to be seen whether or not it is plausible.[42]

III. Baker's View Considered

There are four elements in Baker's view that bear further scrutiny. The first is her emphasis on the unity of constitutionally related objects. Here I merely qualify her position which, on my view, she pushes further than it can really go, and perhaps further than it is intended to go. Second, I address Baker's top-down borrowing thesis. I argue that such a thesis is unwarranted, and at the very least unnecessary for a viable constitution theory. Third, even if the top-down borrowing thesis is granted, I argue for a weaker thesis: namely, that primary-kind properties cannot be borrowed, either top-down or bottom-up. Finally, I raise certain concerns regarding Baker's atypical views on counting and sortals. While I may not here decisively refute Baker's position, I hope to

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[40] The "introduction of F* restricts the definition to cases to Fs [sic] that have the property of being an F as their primary-kind property" ([2000]: 168). It is worth noting that F* and G* are properties and alethic, so not of the borrowing kind.

[41] And, of course, many other properties are borrowed as well.

[42] I have borrowed heavily from a summary section in Baker for this paragraph ([2000]: 168-169).

create some room for an alternative constitution view, one that I argue for in the next chapter.

1. Separate Union

In Baker's attempt to clearly distinguish constitution from identity, she understandably emphasizes the distinctness between the relevant objects in her examples. But to overemphasize distinctness is misleading, on her view, and she thinks this in part because constitution is importantly also a unity. For instance, she writes that "as we see in the examples of, say, a statue and the lump of clay that forms it, x and y are not separate, independently existing individuals".[43] Recognizing the value in both sets of contrary intuitions, Baker attempts to accept both and straddle the fence between unity and separation: "in sum, if x and y are constitutionally related, to say that x has a property H derivatively highlights the difference between x and y and hence the fact that constitution is not identity; but to say that H is, nevertheless, a genuine property of x highlights the unity of x and y, and hence the similarity of identity and constitution".[44] However, trouble looms when Baker emphasizes the union without recognizing the claim to distinctness that her own view requires.

Baker desires to make sense of the constitution relation as an intermediate relation between separate existence and identity, but one wonders what separate existence amounts to. On the face of it, it could mean something like the relation that exists between objects that do not overlap in all of their spatial parts–or, I suppose, that do not

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[43] [2000]: 29.

[44] [2000]: 178-179.

overlap n% in their spatial parts, where n% is some number that is high enough to suggest separate, though not entirely discrete, existence. So, Baker is interested to show that constitution does not entail separate existence, but, alternatively, she is also forced to disassociate Piece and David as much as possible so that she is able to explain their difference in kind, or primary kind.[45] Indeed, Baker suggests that under certain conditions a new thing comes into existence: "when Piece is in certain statue-favorable circumstances, a new entity (a statue, David) comes into existence".[46] Here she clearly claims that at such a time when Piece is in statue-favorable conditions, David comes into existence and there are now two entities extant then and there, and one wonders why she would not also say that there are two individuals present at that time.[47]

Indeed, one wonders if Baker is sneaking a substantive move in here when she indicates that if x constitutes y, then they are not separate, independently existing individuals.[48] This claim is in tension with our intuitions with respect to constitution–namely, that there are two spatially coincident objects where David now sits–and, more importantly, it is a claim which serves her purposes toward arguing that the

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[45] [2000]: 178.

[46] [2000]: 178. See also [99]: 146-147.

[47] But this is precisely what she has shied from saying heretofore: "for when x constitutes y, there is a unitary thing–y, as constituted by x–which is a single thing ..., x has no independent existence" ([2000]: 46). Of course, here she uses the language of thing rather than object, and so she might simply counter by saying that there is one thing but two objects. But such a move would smack of mere wordplay. Given that she thinks that there are two coincident entities, one wonders just how her view differs in fact from the various coincident entities views that she dismisses elsewhere ([2000]: 173, fn 9).

[48] [2000]: 29ff.

constitution relation is ultimately a unity relation, and so may be ad hoc. Yet, I want to be careful here. It seems to me that Baker is relying heavily on what it means to be an independently existing individual if her claim to unity is true. Even so, the fact remains that for objects that bear the constitution relation to one another there are reasons to think that those (two) objects each exist. Further, there are reasons to think, depending on the examples, that one object's existence does not depend on the other object's existence–which looks to me like the objects do, then, exist independently. As an example, take the hunk of bronze and Rodin's the Thinker–the hunk of bronze can persist through the demise of Thinker and does so just when the hunk of bronze is reduced to a malleable substance, once again, and is refashioned into Michelangelo's David. The hunk persists through the change whereas the Thinker does not. Alternatively, the Thinker persists through the change in the hunk of bronze just when one of the fingers on the Thinker is broken off–the hunk has met its demise, but we do not think that the Thinker has met its demise. The fact that both the Thinker and the lump of bronze have different persistence conditions seems to me to justify their having some measure of independent existence, and Baker is committed to these results.

While the unity/separateness issue may well reduce to semantics, Baker's emphasis on property borrowing, specifically her commitment to downward borrowing, is more perplexing. As it goes to the heart of her view, and is, as I shall argue, an untenable position, if my argument finds its mark, Baker's view fails.

2. Baker's Downward Property Borrowing Thesis

At the heart of Baker's version of constitution is her novel, downward borrowing thesis. No other constitution theorist holds the view, but Baker is committed to it for several reasons. First, it accounts for property sharing from constituted to constituting entities, e.g., the value of David is shared with Piece.[49] In other words, while bottom-up property borrowing can account for much of the similarity, Baker does not think it can account for all of the similarity (between constitutionally related entities). Second, it distinguishes Baker's view from the "standard account" of constitution between two spatially coincident objects. Baker thinks that the standard account construes the objects as too distinct. On her view, constitutionally related objects are "unified" and share all manner of properties including kind properties.[50] Third, Baker argues that downward property borrowing saves her constitution view from charges of incoherence.[51] Without downward borrowing, then, Baker would have to give up her commitments to top-down similarity, unified constitution, and would be in danger of incoherence.[52]

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[49] [2000]: 57.

[50] [2000]: 57. I have already noted some of the problems with her unified view in the previous section.

[51] [2000]: 169ff.

[52] Clearly, Baker would not embrace these consequences, but there are reasons to think either that the consequences are preferred to the downward borrowing view or that one need not embrace downward borrowing to avoid the consequences. (The first two reasons given for her view are most closely tied to her arguments by example, while the third reason given is most closely tied to her argument to the best explanation.)

Baker offers several counterexamples to the only upward borrowing thesis in support of her downward borrowing view. While I do not have the space to address each of her purported counterexamples, I will address several of the more interesting ones. The remainder are sufficiently similar in style and content that if my challenges bear fruit against the ones outlined here, they will bear fruit against the others as well.

As we have already seen, Baker has taken pains to outline the necessary and sufficient conditions for an object having some property independently of its constitution relations and an object having some property dependent on its constitution relations. As a reminder, thesis (I) and thesis (D) below represent the necessary and sufficient conditions for independence and dependence, respectively.

(I) x has H at t independently of x's constitution relations to y at t =df

(a) x has H at t; and

(b) Either (1) (i) x constitutes y at t, and
(ii) x's having H at t (in the given background) does not entail that x constitutes anything at t.

or (2) (i) y constitutes x at t, and
(ii) x's having H at t (in the given background) does not entail that x is constituted by something that could have had H at t without constituting anything at t.

(D) x has H at t derivatively =df there is some y such that:

(a) it is not the case that x has H at t independently of x's constitution relations to y at t; and

(b) y has H at t independently of y's constitution relations to x at t.[53]

So to illustrate, David has the property of being a statue independently (non-derivatively) of its constitution relations with Piece because Piece could not have the property of being a statue without constituting David (condition Ib2). In addition, Piece has the property of being a statue dependently (derivatively) because Piece does not possess that property independently of its constitution relations to David while David does possess the property independent of its constitution relations to Piece.

In each of her proposed counterexamples to the only upward borrowing thesis, Baker offers essentially the same form of argument. First, she takes her example to evidence a similarity concerning a particular property between the constituting and constituted object. She further notes that the property in question is held independently by the constituted object, though not by the constituting object. Given thesis (D) above, this clearly implies that the property exemplified by the constituting object is possessed derivatively by virtue of its constitution relations with the constituted object which exemplifies the self-same property though independently.[54] As I will show, each of Baker's counterexamples satisfy this understanding of the necessary and sufficient

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[53] [2000]: 169.

[54] [2000]: 48.

conditions of both (I) and (D) in the relevant respects so that if the constituting object has the property in question at all it does not have it independently. Thus, I do not quarrel with Baker's thesis, even in the special case of primary-kind properties, that the constituting objects do not possess the properties independently. Rather, I question in each case whether or not the constituting object has the relevant property at all, which is, on my view, the primary issue at hand.

A. Countering Baker's Counterexamples

Baker offers a number of counterexamples to what she calls the thesis of only upward property derivation (borrowing). Her counterexamples are an attempt to show that the standard account of the constitution relation, of only upward property derivation–that is, where constituted entities may derive properties from constituting entities, but not the other way around–is in error. This, of course, opens the door for her view in which she holds that property derivation among constitutionally related entities goes both upward and downward. So her counterexamples are understandably such that she attempts to show in these examples something like a downward derivation of properties among constitutionally related entities. I will address three of her counterexamples: the United States flag, an Academic Dean, and the Queen of England.

The first example is of a United States (US) flag. She first notes that it is illegal to burn a US flag.[55] Supposing, then, that it is illegal to burn a US flag, she considers the piece of cloth that constitutes a particular flag, and she thinks that its being illegal to burn

[55] This may not actually be correct though even if it were false it would not tell against her view.

that flag, since it is a member of the class *US flag*, makes it illegal to burn the cloth that constitutes that flag. But she notes that the flag does not derive the property of being such that it is illegal to burn from the cloth; rather, it is the other way around. The cloth derives the property of *being illegal to burn*, or some such, from the flag. "What makes it illegal," she writes, "to burn the piece of cloth is that the piece of cloth constitutes a US flag."[56] And she further notes that "legislators write laws to protect national symbols, not to protect pieces of cloth".[57]

Of course on my view this case does not serve as a viable counterexample to the only upward borrowing thesis and to counter Baker's view that it does I note in particular the last quoted sentence above. I affirm the truth of that sentence, legislators, at least in the United States, do write laws protecting flags and not pieces of cloth, but nothing follows from this regarding the legality of burning pieces of cloth, and I contend that there is no such protection for pieces of cloth. As Baker has noted, legislators do not protect pieces of cloth and, contra Baker, it is not illegal to burn any particular piece of cloth even while it is illegal to burn a US flag.

In a first case, suppose one takes a particular piece of cloth that is shaped and dyed in the appropriate ways such that it has come to constitute what is today our national symbol. But now further suppose that when Alaska and Hawaii were admitted to the Union, no stars were added to the national flag. Clearly, then, this 50-starred piece of cloth would not be a United States flag. Burning it, then, would not be a problem. In a

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[56] [2000]: 48.

[57] [2000]: 48.

second case, suppose that this piece of cloth is burned just prior to its being dyed with the stars and stripes pattern. Here again, it would not be illegal to burn the piece of cloth just because there is no flag present.[58] Neither of these two cases prove troubling for Baker's view, since they do not include examples of a constituting cloth for a US flag that fails to exemplify the property in question. Even so, they do attest to the accidental character of the cloth's possessing said quality–namely, in virtue of its spatial coordinates.[59] The reason the cloth fails to have the property in both of the cases is due to the fact that *some other* object does not obtain, namely, a US flag. While this does not refute Baker's example, it does highlight a countering intuition that when one seeks to learn whether some object x has some property P one should check x to see if it has P, not go searching for some other object, y.

Baker's flag example has a more alarming consequence: an unnecessary duplication–i.e., redundancy or bloating–of properties. My going to jail is in virtue of my breaking the law with regard to the burning of the United States flag. There is no second law that I break when I burn the flag that relates to the cloth, nor am I guilty of breaking the same law twice. To put it another way, given the law we are supposing, an object that gains the property, once the law passes, of being illegal to burn, gains that property in

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[58] Another option: if at time t you place before me a United States flag and there is a law such that it is illegal to burn that flag, but then at t1 the legislature votes and the national symbol changes from the stars and bars to an oak leaf (as opposed to a maple leaf, so as to be different from Canada), it is still illegal to burn the US flag but it clearly is not illegal to burn that particular piece of cloth. At t a flag existed there, but at t1 a flag no longer exists there; the piece of cloth remains the same.

[59] The flag's possessing said property is also contingent, but not on the existence of another object. Its possessing said property is contingent on the whims of legislators.

virtue of its being a United States flag. However, *ex hypothesi*, the piece of cloth is not a United States flag. Were it a United States flag, it would be identical with the United States flag it is said to constitute–with which it is spatially co-located–I would assume. But the piece of cloth is not a United States flag, and so, again, given the law, it would not be illegal to burn it, so long as we are talking about that particular law: namely, the law associated with the burning of flags. There may be other reasons why burning that piece of cloth is illegal, but we would have to look at the law books to determine if this is the case. The law that we are supposing would not be sufficient to show that it is illegal to burn that piece of cloth though it would admittedly be sufficient to show that it is illegal to burn the flag that is co-located with the cloth.

Indeed, one might suppose that a necessary condition of an event's being of the appropriate kind so as to count as a breaking of a law is that it be a member of the relevant class of events picked out by some piece of legal legislation or other. In our case, then, the event must fit the class A BURNING OF A UNITED STATES FLAG. However, the case in question is not a member of this class. Rather, it is a member of the class A BURNING OF A PIECE OF CLOTH. True, at the same time and place there is an event which *is* a member of the class A BURNING OF A UNITED STATES FLAG, but this is a contingent fact. It might not have been the case that this latter event transpired just when the former event transpired, as when that piece of cloth failed to constitute a United States flag at that time. Of course, Baker may want to say that these are the same event. That is, that the BURNING OF THE PIECE OF CLOTH just is the BURNING OF THE UNITED STATES FLAG; they are the same event and so should

"both" be classified as members of the class A BURNING OF A UNITED STATES FLAG. However, this view is implausible on its face. These can only be the same event if they have the same objects as their subjects, but this is clearly not the case. The one has as its subject a United States flag and the other has as its subject a piece of cloth.[60]

The accidental fact that we cannot dissociate a particular United States flag from its constituting cloth because they are spatially co-located in no way mitigates against the fact that it is not illegal to burn the cloth-object. The fact that one always is guilty of an illegal act, that is of burning a United States flag, when one also burns pieces of cloth which are, at that time, in a constituting relation with a United States flag, is simply an accident by association–an association that the piece of cloth has with the United States flag with which it is spatially co-located. At the very least such does not serve as sufficient justification to warrant the addition of the property in question to the piece of cloth, and hence, since the cloth clearly does not have said property independently, of a conclusion in favor of downward property borrowing.

The second counterexample has to do with an Academic Dean and his or her body. The constituting object is the body while the constituted object is the Dean. Baker notes

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[60] Unless of course we are supposing that we are picking out a particular object by ostension when we say *that* and we just point in the direction of the cloth. But if this is the case, there ought to be no ambiguity about the object to which we are referring when we pick it out by ostension. But this is precisely what the constitution argument denies. In other words, there is ambiguity when pointing at the object flapping on the flag pole–we might be picking out the flag or the piece of cloth that constitutes the flag. Although there is a close relationship between the two, it is not one of identity, there are two objects present. So ostension will not help on this issue, and Baker's reading of the flag example comes perilously close to papering over an ambiguity that her view requires if her larger argument is to work: namely, her argument in favor of the constitution relation being a nonidentity relation.

that the Dean has the right to be at the head of a graduation procession and so does the Dean's body. But the Dean's right to be at the head obviously does not derive from the body that constitutes the Dean. On the contrary, the Dean's body has the right by virtue of its constituting relationship to the Dean. And the Dean, it is important to note, has the right independently of being constituted by *that* body or any other particular body, though one might think that some body or other must constitute the Dean for the Dean to exist at all.[61] A couple of points here.

Once again, the question that Baker fails to address is whether or not the Dean's body has the relevant property in question: namely, having the right to be at the head of a graduation procession. While the Dean clearly has that right, the Dean's body does not since bodies do not have rights at all under normal circumstances.[62] Persons have rights, bodies do not. Suppose the Dean suffers a stroke and is comatose. One might think that the Dean survives in that comatose state and, if so, the Dean still has a right to be at the head of the procession. Moreover, on Baker's view, the Dean's body has that right. Why

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[61] While it is true that the Dean has the right of being at the head of the procession independently of being constituted by *that* body, it is false that the Dean has the right of being at the head of the procession independently of being constituted by *any* body. That is, constitution by some body is a necessary condition for the Dean's having the right that he or she in fact has of being at the head of the procession. So while that particular body is not necessary for the Dean's having the property of having the right of being at the head of the procession, some body is essential. Otherwise, the Dean would not have that right–there would be no Dean.

[62] I say under normal circumstances because I suppose that it is possible, though unlikely, that there exists–or at least could exist–some primitive tribe or other that conferred rights on bodies as a matter of religious practice. Such is not the case in Baker's example, however, and would not prove helpful in providing a counterexample to the only upward borrowing thesis in any event.

is it, then, that person's planning graduation do not insure that the Dean's body is placed at the head of the procession? One might think that the Dean no longer exists, in that scenario, and so the Dean's body no longer has the derivative property of having the right to be at the head of the procession. But suppose, then, that the Dean simply oversleeps, indeed, she is slumped in a chair at the graduation ceremony fast asleep. Does the Dean's body still have the right to be at the head of the procession, and so ought we place the Dean's body at the head of the procession? Of course not! In both of these cases, the body's so-called right fails to supersede the circumstances that the Dean is in. But this is obviously the correct result for the Dean is the relevant party here as far as rights are concerned. But, if the body did have a right to be at the head of the procession, then the Dean's circumstances ought not be relevant to whether or not the body is placed at the head. In fact, the Dean has the right, the body does not. The only property that the body has in virtue of the Dean's having the right of being at the head of the procession is that, under normal circumstances, the body is at the head of the procession. But it would be mistaken to suppose, as Baker seems to, that this contingent fact entails some right that the body possesses. The Dean is there by right, the body is there by virtue of its serving as the constituting object of the Dean. Nothing further follows from this concerning the "rights" of the body.

Two final points with regard to the first two counterexamples. First, one wonders how far the reduction goes. Suppose that Baker is correct and there is downward property sharing. In that case, the Dean's body has the right of being at the head of the procession. But I take it that the collection of cells at time t that constitutes the Dean's

body at t also has the property of having the right to be at the head of the procession supposing that at t the body has the property of having that right at that time. It may also be the case that the individual members of the collection also have the property by virtue of their membership in the collection or that there exist other collections, of molecules, etc., that also have the property and so the right. Surely it is obvious that we are reaching the limit of plausibility here. But in virtue of what will the downward property sharing fail at any of the aforementioned stages? What is the relevant difference between the body and the collection of cells, say, that makes downward property sharing non-applicable? I can think of no non-ad hoc limitation and Baker does not provide any, perhaps because she is unconcerned with this counterintuitive result. On its face, however, this result would appear to tell against her view. Not, admittedly, with definitive force, but with an uncomfortable cumulative effect.

Second, combining certain aspects from the two alleged counterexamples, consider the case of Ben. Ben is an unhappy recruit in this story since he is the intended victim of a hypothetical murder by stabbing. Now, while it is illegal to murder Ben by stabbing him, it is not straightforwardly illegal to stab Ben's body. Take, for example, a case where Ben has just recently expired. If one were to sneak into his room and stab him, no crime has been committed–unless sneaking into his room is a crime or something like that–certainly not the crime of murder.[63] Of course, Baker may simply argue that the property of being

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[63] A similar plot line was actually the focus of an episode of the now defunct TV program *Columbo*. In that episode, a man murders a woman and then, upon realizing that he cannot expect to get away with his crime, he frames himself for a *second* murder of the woman, "kills" her again (by shooting her), and then leaves the scene and waits for the police to find him out. He is caught for the second murder but exonerated when the

illegal to be murdered, or some such, is lost by Ben's body just when Ben expires, so my story does not promote a problem for her counterexamples. However, even if one did murder Ben in the story, which means that one has committed an illegal act and for which he or she will stand trial, there is not then a second law that one has broken, that of murdering Ben's body or stabbing Ben's body or some such, for which one will also stand trial. But if this is the case, then why think that one has committed an additional illegal act by murdering Ben's body at all? And if one has not committed an additional illegal act by murdering Ben's body, then why think that Ben's body has the property of being illegal to be murdered?

The third counterexample is similar to the second in that it involves a person and her body, but it is worth addressing since it teases out what appears to be one of Baker's chief reasons for thinking her counterexamples tell against the only upward borrowing thesis.

When Baker illustrates and explains her qualification "in the given background"[64], she uses a new example, that of a Queen. The Queen, she does not say from where but we will say the Queen of England, has the property of being respected in various ways and Baker mentions one: when the Queen enters a room, everyone stands.[65] Following

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forensics show the time of death preceded the shooting. Luckily, Columbo never falls for such obvious chicanery and nabs the nefarious evildoer in the end.

[64] [2000]: 53. This is similar to an aspect of my view and will be addressed in the next chapter.

[65] Baker credits Fred Dretske who credits Susan Feegan for this example. Cf. [2000]: 52, fn. 50.

Baker's suggestion, let us call the property that the Queen has the property of being regally respected. The "given background"–namely, various social and political features of the world–is essential for the Queen to be said to possess the property of being regally respected. In other words, without the given background there would be no such property, so the Queen could not possess it, which is why this example illustrates Baker's "given background" concept. Now Baker says that the Queen's body, what she calls Bq, is also regally respected. And so I assume that Baker holds that Bq also has the property of being regally respected. She gives as her justification of Bq's having the property of being regally respected the fact that when Bq enters a room, all persons stand. Since Bq does not, indeed cannot, possess this property independently, it must possess the property by virtue of its constitution relations to the Queen.

At this point in the chapter, it will come as no surprise that I find this new example troubling. Moreover, while it just seems to me patently false that bodies can be regally respected, I recognize competing intuitions do not go very far in refuting Baker's view. Thus, I will offer four reasons for discarding Baker's Queen counterexample. First, regarding this example one might question whether or not bodies enter, or can be fairly said to enter, rooms at all. Queens enter rooms to be sure, but I do not straightforwardly see how bodies can be said to enter rooms. Bodies are clearly found in rooms, and they are spatially located in different places at different times, but *prima facie* moving about and entering rooms requires minimal intentionality, which bodies do not have. What bodies constitute, perhaps in part, do have minimal intentionality or at least might have minimal intentionality–e.g., Queens. Queens have (at least) minimal intentionality; they

can be said to enter rooms and to move about from chamber to chamber. Bodies, however, do not have minimal intentionality and can not be said to move about from chamber to chamber, where such moving about is the kind of moving that entails some measure of minimal intentionality, and entering rooms, where entering a room entails at least minimal intention. Of course it could be the case that some one did not straightforwardly intend to enter *that* room, but still that person did intend to open the door and move about and did have propositional attitudes with regard to how doors operate, how knobs work, how movement occurs, and all those sorts of things.

Second, while I suppose bodies could be regally respected in some other possible world, this is not in fact the case. Suppose, for example, that some distant tribe has the belief that an ancestor remains with the body for some period of time after death and so pays certain respects to that body. Here again, however, the ancestor is what is being respected and not the body. Again, when the Pharaohs were buried with much pomp and circumstance and with many of their earthly treasures (including their wives and servants), it was not because there was some magical quality attributed to the Pharaohs' bodies. Rather, it was because the Pharaohs were thought to be there and to need all kinds of stuff in the next world/life. So it seems to me, then, that the Pharaoh example is a counterexample to Baker's claim. With the Pharaohs we find the closest thing to a regally respected body that there is to find in this world, but it becomes obvious on further scrutiny that the bodies themselves were not venerated. Rather, the Pharaohs themselves were thought to be still present in spirit with their bodies.

With respect to the Queen, I will grant that she is regally respected. But were the Queen not present, there would be no particular regal disposition with respect to the body, given the background circumstances of England. Were the body wheeled into the room, people would not stand–save, perhaps, in disgust. Were the Queen to switch bodies–or to become confused with her twin as in *The Prince and The Pauper*–then when body A was found in a room, people would no longer stand, unless they were confused, whereas when body B, the new body, was found in the room, people would stand. And it clearly is not because of the body that the people stand, it is because of the Queen. Now, I suppose Baker would agree that it is because of the Queen that the people stand to pay their regal respects. Such would certainly be consistent with her view for the body has the property of being regally respected derivatively–the body gets the property by virtue of its constitution relation to the Queen, but to this, my response is two-fold and comprises also the final two responses of the four promised against Baker's Queen counterexample.

In the counterexample as Baker outlines it, the only evidence of property instantiation is the behavior on the part of the people, behavior that ostensibly indicates the presence of some object or objects that possess the property of being regally respected. However, *ex hypothesi*, every time the Queen is present, the body is also present. Further, every time the Queen is present, the people stand. Now, even Baker would agree that the Queen's being present suffices to explain the behavior of the people, namely, that they stand–indeed, it is a sufficient condition for the people's standing–since without question she has the property of being regally respected. Moreover, the

association between the body and the Queen is accidental, not necessary.[66] So while it is true that the people stand in every case where the body is present and the Queen is constituted by the body, this does not serve as anything more than a co-relational coincidence brought about by virtue of the spatial coincidence of body and the Queen. The case provides no warrant to suspect that anything beyond this is transpiring.

Elsewhere Baker suggests that observed causal features of a property strongly suggest the existence of the property.[67] In other words, if a property has causal features or causal efficacy, then it is a genuine property. Now, the property of being regally respected that body is said to possess makes no difference in the world. It has no causal efficacy. The only property relevant to being regally respected, in this example, that makes a difference in the world–that has causal powers and makes it the case that people stand when the Queen enters a room (i.e., makes causal sense of the phenomena in this case)–is the property of being regally respected that is had by the Queen. Of course, It would be fallacious to say that if there are no observed causal features, then the property in question is not a genuine property and lacks existence. But if there are no causal features that suggest the existence of the property, then we have no reason to think that the property exists. This does not mean that the property fails to exist, it just means that we have no reason to suppose its existence and to suppose its existence without justification looks at best ad hoc. Further, were Bq to have the property, it would only be

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[66] That a body is necessary for the Queen's existing is granted, but *that* body is not necessary–the Queen could have been constituted by any number of other bodies.

[67] [2000]: 55.

so much extra ontological baggage, extra weight. It would not do anything and would serve no purpose. In the case of the Queen's body and the property it is said to have of being regally respected and of people rising when the body enters the room, which is itself given as evidence of that property being instantiated by the Queen's body, since the presence of the Queen is sufficient to account for the behavior of the people and since there is no clear causal connection between the Queen's body and the behavior of the people, there is no justification *on that alone* to think that Bq has the property of being regally respected. And if we can account for the phenomena without bloating our ontology with property instantiation that is unnecessary to account for the phenomena, then we ought to do so.

This last bit reduces to two overall points. First, the case provides no justification when accounting for the phenomena for the instantiation of the property in question by the Queen's body. Second, one ought not to needlessly multiply properties and bloat one's ontology if one can help it. Thus, since the ascription of the property of being regally respected serves no purpose, explanatory or otherwise, in the case in question, and since the simplest explanation is the best explanation, *ceteris paribus*, we ought not to think that the Queen's body has the property of being regally respected and this last counterexample offered by Baker fails.

The issue in each of these examples–i.e., the flag, the Dean, and the Queen[68]–is whether or not each constituting entity does exemplify the property it is said to have

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[68] Baker provides additional examples elsewhere (cf. [99]: especially 155, for her Betsy Ross flag example).

derived from the related constituted entity. In other words, while Baker has provided an account of property borrowing that indeed does go both directions, it is ambiguous whether this aspect of her account is a benefit or a detriment–it is either just right or it is too broad–and it only becomes clear which it is when one ascertains whether or not the properties that are said to be borrowed, including the properties that are said to be downward borrowed, are in fact possessed by the relevant objects in question. If the Queen's body, for example, does not possess the property of being regally respected, or if we have no reason to think that her body possesses such a property, then, far from being a positive consequence of Baker's construal of the constitution relation, the fact that her view entails downward property borrowing tells against her view; it turns out that her construal of the relation is too broad and allows properties to be shared that are not in fact shared. I have argued that just this is the case.

3. Borrowing Primary Kind Properties

Even if constituting objects can borrow properties from their constituted cousins, it remains to be seen whether or not they can borrow any and all such properties. As was indicated earlier, Baker limits the type of properties that may be borrowed. She notes that alethic properties, identity/constitution/existence properties, properties "rooted outside times at which they are had", and hybrid properties may not be borrowed in any direction.[69] However, there is a special type of property, what Baker calls primary-kind properties, that she argues can be borrowed in either direction. There is an open question,

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[69] [2000]: 49, and fn 47 and 48, especially regarding temporally rooted and hybrid properties.

however, whether or not such properties can be shared through downward property borrowing even if some downward property borrowing is possible.[70] To that end, then, in what follows I first get clear just what Baker intends by primary-kind properties and what it amounts to if they can be borrowed. I then investigate and critique the plausibility of sharing such properties.

A. Clarifying Baker's View

Before we can ascertain whether or not primary-kind properties are borrowable we must first be clear just what primary-kind properties are and this is not as easy as it would seem at first glance. One of the foremost problems is that Baker is not always as tidy with her language as she could be. In a paper responding, in part, to essentialist objections raised by Michael Della Rocca to the constitution without identity thesis, Baker offers an argument that, while interesting in its own right, is intriguing as it relates to what she says about primary-kind properties.[71] An extended quote from Baker is warranted here:

> ... consider this form of essentialism: for every concrete thing, there is a kind of which the thing fundamentally is a member. No concrete thing is fundamentally a member of more than one kind. As Aristotle might say, the kind that provides the answer to the question–'what is x?'–is the kind

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[70] Baker admits that this is a viable question. In other words, she recognizes that it is possible to accept the notion of having properties derivatively–especially downward–but deny that a thing can have a primary-kind property derivatively ([2000]: 57). This point has also been raised elsewhere by Michael Della Rocca (cf. [2000]: 57, fn. 52).

[71] See Baker [1997] and Della Rocca, "Essentialists and Essentialism", *Journal of Philosophy* 93 (1996c): pp. 186-202. In the latter, Della Rocca gives an interesting argument, from an essentialist perspective and along a Kripkean line, against the constitution is not identity view.

> of which x is fundamentally a member. The essential kind-properties of a thing are the essential properties that all members of its fundamental kind share; if a thing has any other essential properties, then either they are entailed by its essential kind properties, or they are not properties essential to all members of any kind.[72]

Baker's view here is that since objects can be fundamentally a member of only one kind, they can have essential properties related only to their fundamental kind property or essential properties that are entailed by no kinds whatsoever. In other words, objects will only possess essential properties that accompany fundamental membership in one kind, or by virtue of entailments related to that kind membership, or related to no kind membership whatsoever. Here Baker is using the term 'fundamentally' in similar ways that she uses the term 'primary' in her later work. 'Primary-kind property', then, becomes the reference for what she is here calling fundamental membership of one kind. In addition, while it is not clearly stated, what she says here is consistent with her view that while one thing can fundamentally be a member of one and only one kind, that same thing can also be a member of multiple other kinds though not fundamentally a member of those kinds.

Elsewhere Baker allows that although Piece and David are alike with regard to their "atomic structure" they differ in kind precisely because the difference in kind is rooted in a difference in essential properties and, in the case in question, the difference in essential properties is rooted in a difference in relational properties. Of course, on her view, it is still true that Piece has the property of being a statue and that David has the

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[72] [1997]: 618.

property of being a piece of marble–again, where this latter property is a kind property–or being a piece, but, of course, both of these are derivative and this must be why she thinks they differ in kind: "so despite the fact that David and Piece are alike in atomic structure they differ in kind: the relational properties that David has essentially Piece has only accidentally. Hence, the needed asymmetry to make David and Piece different in kind is secured".[73]

Both David and Piece bear the same kind-type properties with respect to one another on her view. The most important kind-type properties they share, of course, are the property of being a statue and the property of being a piece. Now they share these, but she suggests that David's being a piece is not essential to David, and that David is a statue essentially, while Piece is not a statue essentially, but is a piece essentially. The difference in kind, then, is interestingly enough rooted in a difference in the modal nature of kind properties. Being a statue, much like being human, is a kind property, but whether things are similar with respect to kind is determined not by possession of a kind property, but by how one possesses a kind property. So it looks like, first of all, on Baker's view that there is but one property–one token property of being a statue–that is exemplified by two different individuals. One exemplifies it in such a way that it is necessary for the thing to be, that is David for being a statue, and the other object exemplifies it in such a way that it is not necessary for that thing to be, that is Piece for being a statue. Both are properly so-called a statue, so in that sense, both have the kind property of being a statue, but Baker holds that they differ with respect to kind, and here she must mean something

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[73] [2000]: 178.

like primary-kind, though that is not what she says. Instead, she just says "kind", but it is obvious that they do not differ with respect to kind–they both exemplify *the same* property–though, given her view, they do differ with respect to primary kind.[74]

Thus, on her view both David and Piece have the property of being a statue, but only David is a statue in every world in which it is found, not Piece, and so is necessarily a statue and has the property of being a statue essentially.[75] And so it turns out that on Baker's view primary-kinds entail all essential properties that are related to kinds and all kind-related essential properties entail a given object's primary-kind. In other words, given any object whatever, said object has the sole primary-kind PK if and only if it has all and only the set of essential properties PK_{es}.

While there are any number of ways one might construe the primary-kind property that Statue has of being a statue, Baker intends to wed said property inextricably to Statue's set of essential properties. Thus, Statue has the property of being a statue in the actual world, Wa, and in every other possible world where Statue exists such that in all the worlds where Statue exists it has the property of being a statue. To say that Statue has *being a statue* as its primary kind, then, is just to say that Statue has *being a statue* as an essential property. That is one way to construe the claim. And since this is what Baker intends by primary kinds, the relation concerns kind properties and the ways that kind

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[74] [2000]: 178. I think that Baker has simply been sloppy with her language in this section. If this is not the case, then I do not know what sense can be made of her distinction between kinds and primary-kinds. Nevertheless, this is a confusing section and it need not be.

[75] The reverse can be said with respect to the property of being a piece.

properties are exemplified across possible worlds (or modal contexts). On this understanding, the relevant modality scopes properties but is not inherent in properties, thus saving Baker from inconsistency with respect to those properties–namely, alethic properties–which she holds to be of the non-borrowing variety.[76]

But can such properties be borrowed by constitutional cousins? I have already argued against any and all downward property sharing. Assuming that Baker and her friends may find a way to counter those arguments, I now offer a slightly weaker thesis: namely, that no primary-kind properties may be shared.

B. Extraneous Primary-kind Properties

Now, if it were the case, for example, that the primary-kind property that David is said to share with Piece (or vice versa) is not the same property that Piece borrows, then Baker would have a problem. She would have a problem because, if such were the case, David could not, technically speaking, gift said property to Piece–David would not have it to give! In other words, if the property that Piece borrows is not the same property that David possesses, one could not plausibly hold that Piece borrowed it from David. But as we have seen, Baker is not committed to a difference in property here. On her view, there is but one property, K, that David and Piece are said to share. The difference in primary kinds that also holds between the two lies in the fact that David has K essentially while

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[76] The kind property, for example, being a statue, is borrowable, though the property of being a statue essentially is not. If one takes David and puts David and the Thinker together in a room, then one has two properties, one exemplified by Thinker and the bronze and one exemplified by David and the marble, that are statue properties. We can say of four entities that they have the property of being a statue, but we can only say of two of them that they are of the primary kind statue ([2000]: 178).

Piece has it contingently. Even so, there are reasons to think that Baker has not made a satisfactory case for the sharing (in either direction, but especially downward) of primary-kind properties. Indeed, I argue that her doctrine of primary kinds and primary-kind properties is metaphysically extraneous.

Part of my concern with Baker's borrowing thesis with respect to primary-kind properties comes from her distinction between kind properties and primary-kind properties. On Baker's view, David and Piece have the same kind property, the property of *being a statue*. How Baker can then hold that David and Piece differ with respect to kind when they possess the self-same property (perhaps the same token property) of *being a statue* is somewhat unclear. To root the difference in kind in essential properties makes sense iff kind membership is determined by whether or not the particular property must be essential in order for it, some object, to be taken to be of that kind. But this is precisely her claim with respect to primary-kind properties elsewhere[77], not kind properties. Baker is perilously close to conflating her own kind/primary kind distinction.[78]

Of course, as I noted earlier, Baker is simply sloppy with her language at times when speaking of kinds and primary kinds. When she is careful, she appears to hold that

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[77] [97]: 618.

[78] This is precisely the impression one gets from the section alluded to earlier: "so despite the fact that David and Piece are alike in atomic structure they differ in kind: the relational properties that David has essentially Piece has only accidentally. Hence, the needed asymmetry to make David and Piece different in kind is secured" ([2000]: 178). Here she must mean something like David and Piece differ with respect to primary kind, though this is not what she says. Moreover, this discussion is found after she has made her kind/primary-kind distinction, which makes it all the more puzzling. I will have something more to say about this issue in the next section.

there is a difference between being a statue and being a statue wherever and whenever a thing exists.[79] The former is a kind property, indeed a primary-kind property, that both David and Piece share, while the latter entails that the relevant kind is also the object's primary kind, which is only true for David.[80] Even so, I have the strong sense that this distinction lacks warrant. If one has the property of being a statue, that property entails being a piece of art, where being a piece of art itself entails existence in only art-worlds. That is, an object's having the property of *being a piece of art* entails the essential property of *existing in an art-world*; thus, one cannot have the kind property of being a statue unless one also has the property of existing in all and only art-worlds. In which case, since Piece exists in worlds other than art-worlds, it cannot exemplify the property of being a statue–and thus is not a statue.

Kind membership is more restricted than Baker allows.[81] A particular object may or may not have various nonessential properties that are related essentially to specific kinds and yet not be, by virtue of lacking those properties as essential properties, a member of that kind. In other words, Piece may well be statue-like, but does not have the kind property of being a statue and so is not a statue. Piece might possess certain

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[79] [99]: 146.

[80] For ease, I am interpreting Baker as follows: the kind property of *being a statue* is exemplified by statues and non-statues alike, the necessary exemplification of the kind property of *being a statue* makes the relevant kind the primary kind of a given object and is true of all and only statues, and the exemplification of the property of *being a statue as one's PK* is an essential property of all and only statues and is entailed by an object's exemplification of *being a statue* as its primary kind.

[81] For Baker's view, cf. [1997] and [2000].

properties that are normally associated with statues and that may even be essential to statues–e.g., the property of existing in an art-world–but precisely because Piece does not have these properties essentially (i.e., has them contingently), Piece is not a statue. There is a 1:1 relationship between being of the kind statue and exemplifying those essential properties associated with the kind statue.[82] So it is fair to say of Piece that it is statue-like, but not that it is a statue.

Needless to say, Baker does not buy my argument. The crucial premise is: being a piece of art entails existence in only art-worlds. She would deny this premise, while choosing instead to affirm that: being a piece of art entails existence in an art-world. In other words, while I deny that some object can be a statue, and so a piece of art, contingently, Baker affirms that some object can be a statue contingently. Our disagreement on this score comes down to how one understands kinds and kind membership. While my understanding of the relationship between kinds and corresponding essential properties is hardly novel[83], it does make the addition of primary-kind properties metaphysically extraneous.[84] Kind properties do all the work that Baker

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[82] That is to say, there is an equivalence relation that holds between exemplification of statueness and exemplification of a certain set of essential properties–that would include, but not be limited to, the essential property of existing in only art-worlds.

[83] Cf. Kripke [80]; Wiggins [80]; Monte Cook, "If 'Cat' Is A Rigid Designator, What Does It Designate?" *Philosophical Studies* 37 (March 1979): 61-64; Michael J. Loux, Substance and Attribute (Boston, MA: D. Reidel Publishing, Co., 1978); Gottfried Wilhelm Leibniz, cf. (*Discourse on Metaphysics* and *Monadology*); Aristotle (McKeon [41]: cf. *Categories* and *Metaphysics*).

[84] Further, as I understand them, kind properties are not borrowable on Baker's view as they either are essential properties, entail essential properties, or both.

employs primary-kind properties to do. As such, the addition of primary-kind properties amounts to a needless multiplication of metaphysical layers and a needless duplication of metaphysical tasks. All the metaphysics can be accounted for without resorting to primary kinds and primary-kind properties save for Baker's borrowing thesis with respect to primary-kind properties. Without some real work for primary kinds and primary-kind properties to do, the thesis is ad hoc.[85]

4. Sorting Out Counting in Baker's World

One of the concerns that often faces constitution theorists has to do with an alleged, counterintuitive multiplication of properties, like a thing's weight. Suppose, for example, that Rodin's The Thinker weighs in at an even 7 pounds, and further suppose that another object, we may call it Bronze, is spatially coincident with Thinker at some time. Now, if Thinker weighs 7 pounds, it stands to reason that its constituting partner, Bronze, also weighs 7 pounds. But if this is the case, then should not the mass of the objects in the space occupied by both Thinker and Bronze, S, total 14 pounds? An affirmative response is admittedly counterintuitive–especially when the object(s) occupying S are weighed and the scale shows only 7 pounds–but a negative response can be just as counterintuitive. Either Thinker weighs 7 pounds and Bronze has no weight at

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[85] As I mentioned earlier, however, this is consistent with many of the major elements of Baker's account remaining intact. To say of Piece that it possesses many of its properties, though not the kind statue, because of its relation to David (and vice versa), makes her account, though not quite completely accurate because kind properties are not shared, still mainly accurate. Piece can still be said to have the property *being loved by many*, or whatever, derivatively while David has that property nonderivatively even though, at most, Piece is statue-like and is not a statue per se. Thus, this is the weaker version of my argument where the stronger version is that there is no downward property sharing whatever.

all (or vice versa) or each *really* only weighs 3.5 pounds, not 7. Of course, if there are other constituting entities present–e.g., the collection of atomic particles that constitutes Bronze–the latter disjunct would not provide a sufficient explanation; the weight would need to be further distributed among all constitutionally related entities in S. Is this a real problem for constitution theorists? There are those who would have us think so.[86]

A. The Problem–Multiplying Kinds

As troubling as a multiplication of weight would seem, a multiplication of kinds would be even more troubling, but this is precisely what some argue must occur, and for the same reasons given above, if the constitution relation holds among, for example, a statue and its constituent matter. In "Copper Statues and Pieces of Copper: A Challenge to the Standard Account"[87], Michael Burke claims that the following defines the standard account of the constitution relation: "objects x and y coincide at time t just in case 1) x is not y, and 2) the place wholly occupied at t by the whole of x is numerically the same as the place wholly occupied at t by the whole of y".[88] He notes that as defined coincidence

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[86] Burke [92] and "Preserving the Principle of One Object to a Place: A Novel Account of the Relations Among Objects, Sorts, Sortals, and Persistence Conditions" *Philosophy and Phenomenological Research* 54 (1994b): pp. 591-624; reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 236-272; Zimmerman [95]; Rea, "Constitution and Kind Membership", *Philosophical Studies* 97 (September 1997a): pp. 169-193, and "Supervenience and Co-location", *American Philosophical Quarterly* 34 (1997d): pp. 367-75; Baker [2000]: 176ff. I raise this issue as a means of introducing the problem of property multiplication for constitution theorists. In what follows, I primarily address the multiplication of kinds. I return to the issue of weight, etc., in the next chapter.

[87] Burke [92].

[88] [1992]: 13.

is irreflexive and ubiquitous. Moreover, essential to the standard account is that constitutionally related objects, e.g., Piece and Statue, differ with respect to sort, i.e., they exhibit different sortals. But, Burke asks, given that Piece and Statue are qualitatively identical, how could they possibly differ with respect to sort? Another way of asking the question, what is it about Piece and Statue that makes them differ with respect to sort? The problem, as he sees it, is that there is no relevant difference between Statue and Piece that can serve to ground their difference in sort. Hence, on the standard account, there must be multiple (at least two) statues present in the same space as Statue. He acknowledges that this is counterintuitive and takes it as an argument against the standard account and, by extension, constitution.[89]

B. Baker's Response–What She Needs

Baker recognizes the difficulty present in Burke's charge and offers it as one of the reasons that her property borrowing discourse is so important: namely, her property borrowing thesis explains important ways that her view is different from what Burke calls the standard account. She notes that it is important on the standard account that Copper, the piece of copper, and Statue, the statue that Copper composes, do not share primary-kind properties. That is to say, that Copper is not a statue. Baker notes that Burke thinks that this is important precisely because it makes the standard account more plausible. Otherwise there is an unnecessary multiplication of statues in the same spatial-temporal extension. However, Baker contends that her view does not have this consequence.[90]

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[89] [1992]. See also Dean Zimmerman [1995].

[90] [2000]: 169ff.

While providing various examples in support of her theory on property borrowing, Baker states explicitly that there is but one token of any given property present in the spatio-temporal region of constitutionally related entities. It is this fact that accounts for Statue and Piece failing to have, for example, 2n for weight: "So not only does x really have H by having it derivatively, but also–and this is the other hand–if x has H derivatively, then there are not two independent instances of H".[91] In other words, if I understand Baker here, there are not two tokens of property H present, there is but one token of H.[92]

Even so, this interpretation is troubling, for "instance" can be read as "token" as I have done or it could be read as "exemplification". (I suppose there may be other ways of reading it as well.) The former seems right, the latter is flawed since there must be two exemplifications: two individuals possess and exemplify the property and, indeed, possess that property in different ways (and exemplify it under different conditions and in difference circumstances). On the face of it, this would create just the problems Baker seeks to avoid. Once again, as elsewhere, 'independent' is carrying quite a bit of weight. Its addition here makes it sound like there might indeed be two instances of H, but that they are not independent instances. The problem remains that we have nothing other than a generally intuitive feel for what it means, though its meaning is clearly key to the discussion. Baker does add an example of the type of thing she has in mind. She says that "the reason that derivative properties are not 'additive' is that *there is nothing to add*: x's

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[91] [2000]: 177. CF also Baker [99].

[92] [2000]: 177.

having F derivatively is nothing other than x's being constitutionally related to something that has F nonderivatively. Look at it this way: if x and y have constitution relations and x is an F, then x is the same F as y", and also that "Piece is the same statue as David (in virtue of constitution relations), and Tully is the same person as Cicero (in virtue of identity)" It does not make sense to add the number of hairs on Cicero's head to the number of hairs on Tully's head in order to arrive at the total number of hairs on the head of the orator in the corner. In similar fashion, it does not make sense to do this for the qualitative properties of David and Piece either.[93]

While this may indeed provide an adequate response to a needless multiplication of properties like weight and the like, it does not so easily account for a multiplication of kinds. In the case of weight one could indeed hold, as Baker does here, that there is but one weight property present, and that the number of weight properties is what is relevant when weighing things, not that there are two objects present. However, when one is concerned with counting objects, say, statues, one might hold that what is relevant is not the number of properties, but the number of objects. To her credit, Baker recognizes this distinction and moves to provide an alternative theory of counting that accords with her constitution view and our intuitions that there is but one statue present where Thinker is now present.

Baker claims that Piece is the same statue as David, and she does this by changing John Perry's analysis of how sortals range over objects from *x is the same F as y iff x is identical with y and x is an F*, which is Perry's view, to (C): *x is the same F as y at t =df.*

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[93] [2000]: 177, emphasis in orginal.

x is identical with y or x has constitution relations with y at t and x is an F at t.[94] If (C) is true, then it follows that Piece *is* the same statue as David and we no longer have a problem of multiplying statues. That is, we no longer have a case of two spatially coincident statues, there is but one statue and Piece and David are both it. There is but one property *being a statue* exemplified at t by both Piece and David–David exemplifies it independently and Piece exemplifies it in virtue of its relation to David. Thus, while it is true that it is exemplified in different ways–David exemplifies it nonderivatively while Piece exemplifies it derivatively–this does not affect the counting of sorts and thus does not lead to a needless multiplication of statues there and then.

While Baker does not give a clear argument in favor of (C)–she has simply noted her belief that (C) is true–she has provided an alternative to those who think that *if x is an F and y is an F and x is not identical to y, then there are two Fs.* Here she addresses what is admittedly a very important issue. She offers a three-way classification–identity, constitution, and separate existence[95]–and she asks, and seeks to address, how one is to use this three-way classification for the purpose of counting kinds.

Baker contends that counting can be done either by using identity–if two objects are not identical, then they count as two–or by nonseparateness–if x and y are Fs, then

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[94] [2000]: 174.

[95] [99]: 157. Note the ambiguity in 'separate existence'. One can understand separate existence as "wholly independent" or one can understand separate existence as "in some way different than", and there are probably a host of options in between. Baker has assumed, I think, that separate existence means "wholly distinct". Clearly, then, constitution is not separate existence, on such a definition. But on other definitions constitution may well find a home under the scope of separate existence. I will address this concern further in the next section.

there is one F only if x and y are nonseparate (where 'nonseparate' means either constitutionally related or identical). Thus, when counting the number of statues present at the spatio-temporal coordinates of Piece and David we count but one, since Piece and David are nonseparate, as they are constitutional cousins.

C. What She Cannot Have

Baker's point in all this seems to be that there is but one property *being a statue* exemplified (at t) by both Piece and David. Admittedly, the property is exemplified in different ways for David exemplifies it nonderivatively and Piece exemplifies it derivatively. However, far from causing a problem, this fact allows for Baker's proposed solution to multiplying kinds. While her proposed solution is clever, I wish to address two primary concerns with respect to her method of counting.

First, as Baker attempts to respond to the charge that she is committed to the existence of two spatially coincident statues she is guilty of a confusion. She appears at first blush to want to count by way of property. The fact that David and Piece exemplify, on her view, the same property, S (where S is being a statue), appears to entail that there is only one statue present and they are the *same* statue, where sameness, here, is determined by exemplification of the numerically identical property. Now, I will grant that according to her view the property exemplified by Statue and Piece is numerically identical, but not that the statues present are. Indeed, the objects cannot be identical on her view; they are constitutionally related. Why, then, are there not two statues?

Baker thinks that her counting thesis (C) somehow matches with how we count things; however, there is no argument. In fact, Leibniz' Law has been taken to be a

criterion for numerical identity, which looks like a claim about how we count things–once Statue and Piece fail to be numerically identical, they fail to be counted as one object.[96] And we count kinds by reference to the objects, or individuals, that are said to exemplify the relevant kind, not by reference to property. So while we have but one property, on her view, that is co-exemplified *ex hypothesi*, we have two individuals that exemplify said

[96] I may have just as well have said "individual" rather than "object". Baker is clearly committed to there being two individuals extant in the spatio-temporal region occupied by Statue-Piece. I doubt, however, that anything turns on using "individual" rather than "object".

property–both Piece and David.[97] Now, it seems to me that this is a paradigm case where there are two spatially coincident statues.

While Baker would disagree with my characterization of her view, I fail to see how she skirts this consequence. *Prima facie* either Copper exemplifies statueness, in which

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[97] Though they possess it in different ways, they do exemplify it. This is clear in Baker's response to a proposed counterexample offered by Anil Gupta. Gupta suggests that on the supposition that Piece preexists David, so, say, in 1499 Piece exists, and David comes into existence in, say, 1504, that when Jones points to David in 1506 and says the following: "there is a statue over there that existed in 1499", then if what Baker has said is accurate, and we say that Piece is a statue, then Piece exists in 1499 and what Jones says is true. But of course the objection is that what Jones says is not true since Piece does not constitute a statue in 1499.

Baker's response is interesting. We have conflicting intuitions and it looks like Baker's account cannot resolve our conflicting intuitions with regard to the truth value of the statement made by the person who points to Piece. However, Baker charges Jones with making an ambiguous reference. On one reading of the reference, the statement is true. On a different reading of the reference, the statement is false. In both cases, it is misleading. Indeed there is something over *there* which has the property of being a statue in 1506 and which existed in 1499. But since Piece acquired the property in 1504, and did not have the property in 1499, and so did not exist and have the property of being a statue in 1499, the statement is misleading.

Noteworthy in her response is the clear implication that there are two objects present in 1506–the object that can be ostensively referenced as Piece and the object that can be ostensively referenced as David–and that there appears to be a way of ostensively referring that picks out one and not the other: "there is something over there, namely, Piece, that has the property of being a statue and that existed in 1499" ([2000]: 175). One thinks that one could also say that there is something over there, namely, David, that has the property of being a statue but which failed to exist in 1499. There are two somethings over there and, interestingly, they both exemplify the property–in 1506, at least–of being a statue. How it is, then, that there is but one statue is perplexing. Alternatively, if there really is only one statue there, one wonders in what sense are there two objects there that both exemplify statueness.

Baker is correct when she says that, given the ambiguity of the statement and given that one construal of the statement can make the statement true, that the counterexample does not tell against her view. It is true nevertheless that the way she is forced to respond to the counterexample makes it plausible that she respond in the same way earlier in her Perry discussion and if she responds in that way earlier, then she is not forced, and we are not forced, to accept her downward property sharing–and thus are not forced to accept her account of how it is that we count objects.

case it is a statue and we have at least two statues present in the same spatial-temporal region, or Copper fails to exemplify statueness, in which case Copper is not a statue and the notion of property borrowing is problematic. Of course, Baker holds that the first disjunct is ambiguous and that there is more than one way of construing it, including the notion that both Copper and Statue exemplify the same property.[98] Even so, Baker is committed to there being two individuals/objects there and then and if two objects exemplify statueness, whether derivative or nonderivative, then there are two exemplifications of statueness–the number of properties that are present is irrelevant here–so the fact that they exemplify the numerically identical property, if such is possible, should not affect the count. That is, we count by objects or individuals, not by properties; thus, there are two statues present and Baker is guilty of the charge of multiplying statues.

Now, Baker thinks that (C)–x is the same F as y at t =df x is identical to y or x has constitution relations to y at t and Fxt [x has F at t]–accords with our intuitions with regard to counting most, if not all, things, notably statues, and that this thesis saves her from the multiplication charge. However, she gives no argument or evidence for the (empirical) claim that (C) accords with our counting intuitions. She relies, rather, just on the intuitions themselves[99], which is all the more troubling since intuitions do not provide

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[98] But even on this understanding of Baker's view they must possess said property in different ways and one could argue, as I have done previously, that the primary-kind notion of being a statue is tied inextricably to the notion of having that property essentially, of having that property nonderivitively in Baker's jargon, and if a property is had contingently and derivatively, then it is not the primary-kind property.

[99] Admittedly, the justification of certain metaphysical theses may at times reduce to intuition, but such is not always the case. Regardless of the value of arguments based on intuition, when there are competing intuitions such arguments are insufficient.

substantial support for a thesis of how we *in fact* count. Moreover, her entire constitution thesis flies in the face of a more basic intuition that is undeniably present–namely, that there is but one statue in the spatio-temporal region of David precisely because there is but one object. Indeed, Baker's assertions here have a suspiciously ad hoc flavor to them and at the very least no one who thinks that she is guilty of double counting will buy (C), so she has not met the charge of her critics. Even so, there is another difficulty which centers on her three way division: identity, constitution, and separateness.

Second, Baker makes a great deal about the fact that constitution is intended as a third alternative between identity and separate existence.[100] Now, identity is a clear enough relation, but Baker's notion of separate existence is anything but, and it seems to me that in order to draw clear conclusions from the fact that constitution must be a via media between these two relations, we ought to know what the other side is. She has provided an intuitive sense of separate existence by pointing at two apples as a paradigm example, but there is an overabundance of room between identity and two spatially distinct apples in a barrel for constitution to find a home.

What Baker needs to provide is the necessary and sufficient criteria for separate existence. What that amounts to will have great effect on whether or not her understanding of constitution is the only via media approach out there for constitution. Of course, I think it is not. To her credit, she does make an attempt at necessary and sufficient criteria of a sort. She says that to count one can either choose counting by identity "if x and y are Fs, then there is one F only if x is identical to y", which is Perry's

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[100] [2000]: 174.

view, or by nonseparateness "if x and y are Fs, then there is one F only if x and y are nonseparate" where, and here she finally defines nonseparate and, not surprisingly, it is in relation to identity and constitution, where x and y are nonseparate iff either x is identical to y or x is constitutionally related to y.[101] Now it appears that she is no longer intent on defining constitution as a via media between separate existence and identity; rather, she defines what it means to be nonseparate, and so what it means to be separate, in relation to constitution and identity. In other words, the relations of constitution and identity are used to define separate existence. So, far from Baker using the notion of separateness to help make sense of the constitution relation[102], she defines it in light of the constitution relation. Whether this is viciously circular or not, nonseparateness, or separateness, can not itself serve to help explain constitution since constitution is a necessary component of its own definition.

Moreover, this is to say nothing of the problem Baker faces of showing how her definition matches with the paradigm example of the two apples. Baker is committed to the view that there are but three options: identity, constitution, or separateness. But this is only true if separateness is a very broad tent, including things which are not wholly distinct, either spatially or temporally or mereologically.[103] Are two clouds which overlap

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[101] [2000]: 174.

[102] Which is the implication when she claims that her view is a unity amidst difference–"I want to make sense of constitution as a third category, intermediate between identity and separate existence" ([2000]: 29)–a middle position between identity and separate existence.

[103] [99]:157.

separate or nonseparate? How about two shadows? Two holes? How about various versions of Siamese twins? Baker's kind of counting introduces a troubling vagueness into counting that does not exist on Perry's method, and a nonvague theory of counting is to be preferred to a vague theory.[104]

Baker's view, while original, has its own set of unique problems that greatly inveigh against its viability as a view of material constitution. I now turn to a statement of my own view which incorporates some features similar to those found here, but none of the more problematic ones, e.g., downward property borrowing. I argue that one need not accept the negative consequences of, for example, Baker's view in order to give a robust picture of the constitution relation.

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[104] If Mark Johnston's claim that constitution is an inherently vague notion is correct, then there is no criteria of counting that includes constitution as an element that is nonvague (Cf. [92]: 56).

Chapter 5

The Emergence of Objects: Constitution in the World

I. Introduction

I am now in a position to offer my own version of the constitution relation. In what follows, I first address two intrinsic theories offered recently by Samuel Levey and Michael Rea. As these views are both intrinsic–that is, all properties of objects are determined by their parts and intrinsic relations among their parts–they are inadequate to account for all constitutionally related phenomena. After critically evaluating those views, I then offer my own, which, like Levey and Rea, has intrinsic features, but unlike Levey and Rea, also has extrinsic elements which allows me to account for a broader set of phenomena. I then use my view to address several criticisms of constitution found in the literature. Finally, I show how my version of constitution can help make sense of entities in both the social and religious realms in addition to garden-variety, everyday objects.

II. Compositional Principles and K-wise Arrangement: Two Intrinsic Theories

1. Compositional Principles

Samuel Levey has written a wonderful article in which he distinguishes two primary elements within the standard account of constitution.[1] First, that the coincidence between distinct material objects is possible. This he calls the Doctrine of Coincidents. Second, that the coincident relationship between objects is ubiquitous. Levey affirms the

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[1] Levey follows Burke's terminology, cf. Burke [1997].

first and denies the second, but he thinks that Michael Burke has laid down a significant, and difficult, task for the proponents of the standard account: namely, how two objects can coincide and still differ with regard to sortal. He allows that the standard account theorist has shown *that* this could be, but they have not explained *how* this could be, and he thinks that such an explanation is essential if the standard account is to respond to Burke-type challenges. Even so, Levey has bigger fish to fry and opts to drop the sortal concern that Burke pushes and to ask how two coinciding objects could differ in any qualitative way whatever.[2]

Two other important elements frame Levey's discussion. First, he maintains that a thing can have two types of properties: properties that belong to its core and properties that supervene on its core. By 'core', Levey means, I take it, a thing's physical parts.[3] Second, he holds that dispositional, counterfactual, and modal properties supervene on the core physical structure of a thing. Now, since two coincident objects share the same core physical structure–that is just what the Doctrine of Coincidents claims–Levey wants to know how they could possibly differ with respect to any such properties. Far from being a problem merely for sortals, object coincidence is, then, a problem for any measure of qualitative dissimilarity.[4]

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[2] [1997]: 2.

[3] Here, I disagree. For objects like dollar bills, statues and other artworks, and perhaps other objects as well, have properties that supervene on an object and the object's relations. For example, the value of a dollar bill supervenes on the structure *and* how that structure is related within an economic community.

[4] [1997]: 3. If one allows Levey to frame the question in this way, there is no way that two coincident objects could differ with respect to such properties save in the extreme

These two assumptions lead to what Levey terms the Difference Thesis: modal difference only if core difference. Since no core difference, no modal–dispositional, etc.–difference; so it looks like no coincidence. This is what he calls the supervenience problem. Among others, Levey takes this problem to be an important one for constitution theorists, and he thinks that the supervenience problem must be answered by showing how it is possible that there could be qualitative difference amidst objects with intrinsic physical indiscernibility, which is precisely what Levey aims to show.

Levey offers a mereological view of objects[5], but supposes that while parts compose objects, those parts can be differently related–causally related–and that each different causal interrelationship of parts is sufficient to explain a composition of those parts. These different causally efficacious interrelational principles he calls principles of composition and an object's principle of composition determines all of its essential properties, including all essential properties related to its sort: "a composite object's essential properties are determined by those properties of its parts that are relevantly connected with its principle of composition".[6] All other properties, properties unrelated to

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examples he offers. However, I see no good reason to frame the question in this fashion–that is, by assuming that such properties supervene in the ways that he describes–and, further, I see good reason to think that such properties supervene on a far broader subvenient set than he allows, which I shall address in the next section.

[5] Levey's mereological view does not suffer from some of the obvious problems–e.g., the bloating problem of Judith Thomson or the essentialist problem–of other mereologies.

[6] [1997]: 6.

an object's compositional principle, can only effect accidental properties of a given object.[7]

Interestingly, the mereological doctrine of uniqueness, such that there is one and only one unique individual that is the whole of the sum of any given set or sequence or collection of parts, is false on Levey's view. Instead of offering an extensionalist mereology, he offers an intensionalist one, and it is only in extensionalist mereologies that the doctrine of uniqueness makes sense. Even so, he can affirm two theses from which the doctrine of uniqueness is thought to follow: 1) that if two objects are distinct, they must differ with respect to either their intrinsic or relational properties (this must be interpreted in light of the second thesis), which is a version of Leibniz' Law[8], and 2) the intrinsic and relational properties of an object are wholly determined by the intrinsic and relational properties of its parts.[9] Levey sees no problem with the first thesis, and does not think that the second thesis leads ineluctably to uniqueness[10] because, on his view, macro

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[7] This, I think, is false. Consider, once again, the statue example and, in particular, that statues exist only in art-worlds. In this case, the object's relationship to an art-world bears on its essential properties. I will say more on this issue later.

[8] Up to this point in the dissertation I have used Leibniz' Law to refer to the Indiscernibility of Identicals. The version that Levey references here, however, is the contrapositive of the Identity of Indiscernibles. The latter states: $(x)(y)((F)(Fx \leftrightarrow Fy) \rightarrow (x = y))$. This is the controversial version of Leibniz' Law and there are been counterexamples offered against it [cf. Max Black, "Identity of Indiscernibles" *Mind* 51 (1952)]. While Levey may well be susceptible to criticism on this point, I will not address it here.

[9] [1997]: 5.

[10] Levey argues that efforts to shore up the second thesis with a third thesis to guarantee uniqueness either beg the question against coincidence or against an intensionalist mereology or both ([1997]: 6).

difference is determined by, or does supervene on, micro difference. It is simply the case that the various parts have multiple kinds of properties which are sufficient to determine a difference in macro property expression.

As an example, Levey supposes a case where two lumps of matter that contain particles of the same kind are introduced to one another in such a way as to comprise a sphere. Now, *ex hypothesi*, the resultant sphere can be causally explained either by chemical properties of adherence that the particles have, such that the sphere structure would result, or magnetic properties that the particles have that would also cause the sphere to form, such that if either are present, each is sufficient for the sphere to form then and there, though neither are necessary. In the first case we have what we might call Chemball and in the second case, Magnoball, and, according to Levey, this is an example–albeit a far-fetched and perhaps merely possible worlds one[11]–of coincident objects.

Consistent with others we have seen, Levey holds that the coincidence of objects explains their sharing of physical properties. Moreover, he contends that the capacity for any composite object to serve as, in Doepke's words, the substratum of another's existence is determined by the physical characteristics of the composite, but that the composite's own survival conditions (persistence conditions) are underdetermined by physical structure.[12] It is underdetermined, on Levey's view, because there are cases

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[11] [1997]: 5 fn 7.

[12] Here we agree, but for different reasons. On my account the physical substrate underdetermines the persistence conditions of the composite in additional cases to the kind Levey offers just when the persistence conditions of the composite are determined by

where there are multiple, sufficient compositional accounts that would explain differing survival conditions, as in the case above including Chemball and Magnoball. In such cases, the appropriate composite object must be linked with the appropriate compositional principle.[13]

Armed with his compositional principles, Levey dispatches the supervenience problem by noting an ambiguity in the difference thesis. The difference thesis amounts to two separate claims. The first is the supervenience thesis: differences in dispositional or counterfactual or modal properties can only supervene on core differences. So, modal–dispositional, etc.–difference only if core difference. This thesis he thinks is true. But the second thesis he takes to be false: namely, that coinciding objects necessarily lack core differences since physical indiscernibility requires a single core structure. He thinks this thesis is false for obvious reasons in light of his counterexample.[14]

Levey offers an interesting alternative that is moderately compelling as far as it goes. While he has made room for constitution without identity, he has not gone far enough for at least two reasons. First, as previously noted, he challenges the ubiquity of the constitution relation, but he has not accounted for all cases of constitution. Contrary to Levey's view, modal (dispositional, etc.) properties do not supervene merely on an object's parts and intrinsic relations; in some cases extrinsic relations partly determine such

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extrinsic relation(s). Here Levey would clearly disagree.

[13] [1997]: 7.

[14] [1997]: 8.

properties. Thus, because of certain ontological assumptions, Levey has left out an entire class of objects that are constitutionally relevant.

Second, Levey maintains that "taken in abstraction from its modal or dispositional properties a composite object appears as a compositional structure awaiting supervenient detail [..., but that] taken in abstraction from its principle of composition, however, a composite object does not appear as a bare physical structure awaiting detail; *it simply does not appear at all*".[15] So, on his view, one cannot consider a composite object apart from considering its principle of composition. This is because, as he says, "the manner of connection of core properties, for properly composite objects, is a consequence of the principle of composition in virtue of which the parts compose the object" and "the rest of the object's properties are logically constructed from its core physical properties and its manner of possessing them."[16] Thus, if no compositional principle, then no core features, and if no core features, then no features whatsoever; hence, no composite object.

But this strikes me as analogous to what the sortal relativity theorists hold with respect to sorts, where identity of objects can only be understood in light of sort. Here Levey suggests that when asking questions related to the identity of objects[17], what properties are essential or nonessential, for example, one has to view the object relative to its compositional principle. Although he has changed from a reference to sortal to a

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[15] [1997]: 8, emphasis is in the original.

[16] [1997]: 7.

[17] Indeed, any question whatsoever about objects, but here I simply point out the ramifications for identity, object individuation, and ostensive reference.

reference to compositional principle, the change has not mitigated the basic idea that he introduces a relativity into the question of whether or not two objects are identical. Indeed, given that on Levey's view compositional principles determine sortal membership, the difference between the sortal relative theorist and Levey is further blurred. Moreover, there is no possibility for object individuation or ostensive reference apart from compositional principle on his view. One may only individuate and/or (ostensively) refer in accord with compositional principles.[18]

I offer no further argument related to this issue here save to note that Levey is forced to find room for constitution by using what amounts to a relative view of identity (etc.) because of a confusion addressed above in my first criticism: namely, he has cast the supervenience net too narrowly. If he expanded the subvenient component to include extrinsic relations he would have no need to turn to relative identity to fund his view of constitution–a price which is too steep to pay.[19]

2. K-wise arrangement

An even more promising picture that accounts for Burke-type counterexamples to the standard account is offered by Michael Rea.[20] One optional response for the co-locationist that provides an adequate explanation of qualitative discernibility with "intrinsic

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[18] And here, I take it, Levey is making a metaphysical point as opposed to an epistemic one.

[19] I made clear at the outset that I would not countenance any relative picture of identity, though it is noteworthy that by offering this theory Levey has countered the claims of sortal relative theorists that their view erases the need for a theory of constitution.

[20] [1997d]

indiscernibility", according to Rea, is to endorse a view of objects where objects of a kind K exist just when the constituent matter is arranged K-wise. That is, when a mass is present at some time in some place and that mass is arranged K-wise, then a K is present at that time and place.[21] As the primary example when explicating his view, Rea uses the case of Socrates and the lump of stuff that constitutes his body. In this case, since the one mass is Socrates and we are concerned with kinds, it is arranged H-wise for the sortal *human*, and since Rea refers to Socrates' constituting matter as a lump rather than a body, it is arranged L-wise for the sortal *lump*. The intrinsic lump-determining properties supervene on the mass arranged L-wise, and the intrinsic human-determining properties supervene on the mass arranged H-wise. Now, of course, there is quite a bit of overlap between the set of L-supervenient properties and the set of H-supervenient properties such that properties like mass and extension are shared and so exemplified by both objects. In other words, Socrates, who is not identical to Lump, exemplifies the H-properties and Lump exemplifies the L-properties, but there is a large set of properties where H and L overlap that are exemplified–same token exemplification–by both Socrates and Lump, which accounts for similarity in mass, place, smell, shape, and so on. But not every property in L is also in H, and vice versa. Lumps are not typically the sorts of things that have beliefs nor are they the sorts of things that can exemplify humanness[22] (unlike humans, in both respects), so now we can make sense of two divergent intuitions: co-located objects share many, but not all, properties. Thus, according to Rea, "multiple

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[21] Admittedly, Rea's view is close to that offered by Levey.

[22] Contra Baker.

objects fill a given region just in case there is matter in that region which is arranged in more than one object-constituting way at once".[23]

In critique, I simply note that while there is something of worth here, similarly to Levey, this account will not work in every case. For example, in the case of a statue what Rea has offered is a necessary condition, but is not itself sufficient across worlds. Indiscernibly related masses and indiscernibly arranged masses would not always net the same sortal instances. In this world a mass arranged S-wise would indicate the instantiation of an S, a statue, because of certain other features about this world that are also essential–namely, that the actual world is an art-world–but that same mass with the same S-wise arrangement in another possible world that is not an art-world would not serve to instantiate an S. An adequate picture of constitution must account for this discrepancy.

III. Material Constitution: The Emergence of Objects

I am now in a position to put flesh to my own account of the constitution relation. Following what has become standard procedure, I use as my paradigm example a statue, Rodin's *The Thinker*, which I name Thinker, and the marble hunk that constitutes it, which I name Hunk. As I have already noted, my view bears some similarity to several of the current options regarding constitution–e.g., Baker, Levey, Rea–but it differs in rather important ways from each. In what follows, I lay out my view in the clearest manner possible. I do not always note when a similarity arises between my view and that of

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[23] [1997d]: 372.

another; rather, I will leave it to my reader to do that in the light of the discussion of the previous pages.

1. Material Constitution: Formally Stated

By way of reminder, I tease out several differences in properties between coincident objects using the example of a statue, say, one of Rodin's statues, the Thinker. Now suppose that Thinker is composed of a hunk of marble (I do not actually know the physical make-up of the Thinker, but it could be marble) which I will call 'Hunk'. The question before us is this: is Hunk identical to Thinker, that is, are Hunk and Thinker the same thing? The *prima facie* answer is yes. It looks like 'Hunk' and 'Thinker' both refer to the same object. Nevertheless, if we can find some feature that differs between Hunk and Thinker, if we can find something that is true of Hunk that is not also true of Thinker, then we will be forced to conclude that Hunk and Thinker are not identical.

In fact, it will be obvious by now that I think that Hunk and Thinker are not identical. I think this because there are things true of Hunk that are not true of Thinker, and *vice versa*. Suppose, for instance, that Rodin took the as yet unformed Hunk and set it on his table at time t. Then, at time t1, Rodin shaped Hunk in a particular fashion, and created Thinker. It is true, then, that Hunk existed at time t, but Thinker did not exist at time t. Further, suppose at time t2 that a very small piece of Thinker falls to the floor and is swept into a garbage bin. It looks like Thinker still exists–after all, the missing piece is not even noticeable–however, Hunk no longer exists. Hunk is a particular piece of marble, and cannot survive any loss, or addition, no matter how slight (in terms of macro, though not micro, change). After the loss of the small piece from Hunk, we now have a

different hunk of marble which we could call 'Hunk*'. But these differing features are all temporally tainted, so I will offer some non-temporally laden features that differ between Hunk and Thinker.

One such example concerns the different origins of Hunk and Thinker. It is true of Thinker that it was created by Rodin, but this is not true of Hunk. Hunk, after all, was created by some complex geological process. One might argue, however, that this example sneaks temporally tainted concerns back into the picture. While I admit that I do not find temporally relative identity very satisfying, this example is consistent with such a picture. For we can simply stipulate that, under some very extraordinary conditions, Rodin was present at the "accelerated" creation of Hunk, and that, simultaneous to Hunk's creation, he fashioned Thinker. With this stipulation, then, we can see that while both Hunk and Thinker were created at the same time, both came into being as a result of a different creative process, i.e., had different origins.

Hunk and Thinker also differ in terms of their modal properties.[24] For example, if Hunk were to be smashed with a sledge hammer, it would still exist; however, Thinker would not survive such a smashing. Hunk and Thinker have different persistence conditions. They also differ with respect to essential properties. Hunk can exist in nonart-worlds while Thinker can not. It would appear, then, that Hunk and Thinker are distinct objects, though they co-exist both spatially and temporally at time t, and so are not

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[24] In fact, Allan Gibbard has provided an example where the only difference is a modal difference (cf. [1975]).

identical. Even so, it is fairly clear that they must bear some relation to one another, and that relation is constitution.

An accounting of the constitution relation is then called for, especially since it is such a misunderstood, and yet ubiquitous, relation. To wit, constitution is recursively defined as follows:

x constitutes *y* at time *t* iff$_{(def.)}$

1) *x* exists; and

2) *y* exists; and

3) *x* is not identical to *y*; and

4) *x* is in K-circumstances; and

5) the parts of *x* are K-arranged, *x* is not (and could not be) a K, and *y* is a K; and

6) *x* and *y* are spatially coincident and every part of *y* is a part of *x* or is constituted by a part of *x*.

These six criteria provide the necessary and sufficient conditions for the constitution relation.[25] The purpose, and justification, for the first three is apparent. There can only be a constitution relationship between objects if at least two objects exist and they are not identical. The fourth condition accounts for the importance of extrinsic relations to constitution. Extrinsic relations are important because they can make a difference in

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[25] I refrain from calling it the material constitution relation because I, like others, do not wish to preclude the possibility of immaterial constitution relations in my definition. Nevertheless, I am here in no way committed to any more than material constitution relations.

objects, including sorts of objects: e.g., a lump of stuff can only constitute a statue in an art-world. However, as I will soon make clear, the notion of K-circumstances is a broad one. I have intentionally left it that way so as to provide a more inclusive theory of constitution.

The fifth condition concerns the intrinsic relations of an object. It is not enough for x to be in K-circumstances, it must also bear the intrinsic arrangement of a K. Moreover, since any object can serve as an instance of one and only one K, this condition explicitly states that x is not a K, which precludes both the possibility that x is a K already, making the posit of y explanatorily extraneous, and denies the possibility of Ks constituting other Ks–i.e., Ks cannot constitute Ks. For example, a lump of stuff must be S-arranged, and must not itself be an S, in order to constitute an S (i.e., statue). However, objects may participate in more than one K-arrangement. In other words, the constitution criteria allow for some z to be constituted by x where x is also K^1-arranged, in addition to being K-arranged, and z is a K^1. This, in turn, allows for Levey's example of constitution with x as the constituting agent of both magnoball and chemball and also for Doepke's trees of constitution where the same x can be said to constitute both y and z–e.g., the same x may be in a P-wise (person) and B-wise (body) arrangement.[26]

The sixth condition necessitates the spatial coincidence of x and y and accounts for the possibility that not all constituting partners share all and only the same parts. Take, for example, my body and the collection of molecules that constitutes my body. My body has

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[26] Of course, since each of the conditions is itself necessary, x must also be in P-circumstances and B-circumstances.

various organs as parts–e.g., heart, liver, lungs, etc.–but the collection of molecules does not have those same organs as parts. Even so, the collection of molecules does serve to constitute my organ-parts; thus, satisfying the second half of condition six.

All six conditions lead to what I call the Emergence Thesis: Where x is K-arranged and in K-circumstances but is not a K, then there is a y such that y is a K and x constitutes y. Constitution is transitive, irreflexive, and asymmetric.[27] K-properties supervene on K-arrangement (including parts) and K-circumstances which explains (just is) what Baker terms upward borrowing. This explains the similarity of x and y with respect to most properties–e.g., mass, shape–but not with respect to other properties–e.g., belief, value, sort. My view, then, can be accurately construed as an object emergence theory. When x is an F, but is in K-arrangement and K-circumstances, then there is a y such that y is a K and has an additional set of properties, P, including causal, modal, temporal, and the like, standardly associated with Ks and not true of Fs. While the presence of the properties suggests that a K has emerged, the emergence of y as K is what explains the presence of the new set of properties–the set of properties is epistemically prior while the emergence of the K-object is metaphysically prior–and the placement of the F-object in K-arrangement and K-circumstances is what explains the emergence of the K-object.

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[27] While in agreement on the irreflexivity and asymmetry of constitution–though her property borrowing borders on symmetry–Baker and I disagree on the transitivity issue. I hold that constitution is transitive, following Doepke ([1982]: 20) while she holds that it is not. It is worth noting that she does not provide an argument for intransitivity and one wonders how such an argument would go to show that while the collection of molecules constitutes Socrates' body and Socrates' body constitutes Socrates, the collection of molecules does not constitute Socrates. On this issue, see Baker [99].

With respect to Thinker and Hunk, I have already shown that both exist and that they are not identical as Rodin exits his shop after creating Thinker. Further, since Hunk is in the actual world, and the actual world is an art-world, Hunk is in S-circumstances, allowing for the emergence of Thinker. In addition, while Hunk is not an S (Hunk is, rather, a hunk or piece or mass) Hunk is in S-arrangement–Rodin has seen to that–which also allows for Thinker's emergence. Finally, every part of Thinker is also a part of Hunk or constituted by a part of Hunk, satisfying the sixth condition. I now turn to a more complete explanation of my version of the constitution relation along with a defense of said relation from some of the more standard criticisms.

2. Material Constitution: Explained and Defended

A. Similar/Dissimilar

The first issue is a familiar one.[28] Namely, that the constitution theorist must provide some account of why it is that the constituting and constituted objects share so many of their properties, or are as similar as they are, if they are not identical. Obviously, if they are identical, one can easily make sense of their similarity–they are the same thing. If they are not identical, but instead are related by virtue of constitution, then what accounts for their vast similarity becomes more difficult to explain, but an explanation is wanted. The flip side of course, as we have seen, is the concern raised by Michael Burke

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[28] This issue is addressed throughout the literature. For some specific examples, see Baker [2000]; Doepke [1982]; Mark Johnston, "Constitution Is Not Identity" *Mind* 101 (1992): 89-105, reprinted in and cited from Material Constitution: a Reader ed. Michael C. Rea (New York, NY: Rowman and Littlefield Publishers, Inc., 1997): pp. 44-62; Thomson [1998]; Burke [1992]; Zimmerman [1995]; and David Lewis, On the Plurality of Worlds (Oxford: Basil Blackwell Publishers, 1986): 252.

in light of the Standard Account: assuming that a satisfactory explanation of similarity is found, how, then, is the constitution theorist to explain the dissimilarity that constitutionally related objects have with respect to one another? I address both concerns with respect to general properties, like mass, color, etc., and special properties, like kind.

i. General Properties: Mass Objection

The similarity concern can, I think, be discharged rather quickly. Take as an example a case where there are two co-located objects, say, Thinker and Hunk. Now, suppose that Thinker weighs 7 pounds. So far, all is well and good, but intuitively we expect Hunk to weigh 7 pounds too. If that is the case, then there should be a combined mass in the spatio-temporal region of Thinker-Hunk of 14lbs, or so the objection goes. But clearly, the mass in that location is just 7 pounds. What gives?

Well, as I noted in an earlier chapter[29], the constitution theorist has some options. He or she could hold either that Thinker weighs 7 pounds and Hunk has no weight at all (or vice versa) or each *really* only weighs 3.5 pounds, not 7. Of course, if there are other constituting entities present–e.g., the collection of atomic particles that constitutes Hunk–the latter disjunct would not provide a sufficient explanation; the weight would need to be further distributed among all constitutionally related entities in the spatio-temporal region of Thinker-Hunk. None of these options is very inviting.

A satisfactory response to the mass objection bears on the similarity concern. Some constitution theorists argue that the similarity between constitutionally related cousins is explained by the fact that they share almost all, though not quite all, of their

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[29] Cf. Chapter 4, § 4.

properties.[30] However, on this view, one is left wanting an explanation for the two objects sharing almost all of their properties. Indeed, explaining the vast similarity of two objects by pointing to the fact that they share most of their properties seems a bit disingenuous–what explains the near qualitative indiscernibility is precisely what is at issue. That they share most of their properties is not in question; what explains that sharing of properties, apart from identity, is.

Rather than the sharing of properties, what *explains* the near qualitative indiscernibility of Thinker and Hunk–and hence, that they share the same mass, but that the region where they are spatially located does not increase mass by a factor of 2, or any other n (accounting for more than two constitutionally related entities)–is the fact that Thinker and Hunk spatially overlap one another completely and so share all of the same parts.[31] That they share all of the physical properties associated with those parts, and many other properties associated with those parts, then, is not a surprise, nor is the fact that the mass of the spatial region occupied by Thinker-Hunk is a scant 7 pounds–they share the *same* mass, the same token, not just the same type.[32]

Thus, both the vast similarity of Thinker and Hunk and the fact that the spatial region of Thinker-Hunk does not have a mass of 2n, or any other needless doubling of properties, is explained by the fact that they share all and only the same spatial extension

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[30] This is Baker's view.

[31] On the assumption that properties are not parts of objects. If such is the case, then this refers to all and only spatially extended parts.

[32] This is similar to a response offered by Dean Zimmerman ([95]: 89).

and, along with it, complete part overlap. However, this fact does not account for the dissimilarity concern: namely, how two spatially co-extensive objects can differ with respect to any property, most notably kind properties. It is to this issue that I now turn.

ii. Special Properties: Difference in Kind

Changing our example, take Socrates and his constituting lump of matter.[33] Since Socrates is a human being and if sortal properties supervene on microphysical structures (parts and their relations), then we have the odd consequence, although it is a consequence that Baker would embrace, that Lump, Socrates' constituent lump of matter, is a human being as well, albeit a rather odd sort of human being. I say odd, because Lump does not have the persistence conditions that a human being has. Now, coupling this with other facts of humans and bodies, when I inadvertently chop off my finger, say, in a rather gruesome wood shop accident, not only do I cause harm to myself, but I have killed another human being, namely, Lump. Moreover, I take it that I have also created a third human being, thus putting myself in the position of Creator of the new lump-human, Lump*. Further, were my intentions of a particular sort, I may well have committed murder when I chopped off my finger and killed Lump.

The aforementioned is, admittedly, rather counterintuitive, but there is another option: we can deny that Lump has the persistence conditions of a lump and suggest that Lump now has the persistence conditions of a human being. But if such is the case, the following is a consequence: there is nothing co-located with Socrates that has the persistence conditions of a lump, though there are things co-located with Socrates. But all

[33] I borrow this particular example from Rea [1997d].

of the things co-located with Socrates have the persistence conditions of a human being, including the lump, the body, the aggregate, etc..[34]

All of the above seems rather far-fetched and counterintuitive, but these sorts of consequences are precisely what Burke thinks the constitution theorist is committed to. The constitution theorist is so committed, on Burke's view, because there is no relevant fact of the matter concerning constitutionally related objects that serves to allow for any qualitative dissimilarity, including difference in sort.

If true, this assumes, as Baker says, "that the nature and identity of a thing are determined wholly by the nature and identity of its parts".[35] With this assumption it does become difficult to see how two objects that consist of all and only the same spatial extension (parts) could differ with respect to kind, but I will argue in the next section that kind membership is sometimes determined by relations that are external to an object and

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[34] [1997c]: 368. Rea includes an example related to beliefs held by Socrates and, by constitutional inference, his body. He points out that in addition to the rather counterintuitive consequence that bodies, or lumps, have beliefs, it turns out while a belief held by Socrates (at t) might be true, that same belief, held by Body (at t), might be false. This is odd because "they" must be the same (token) belief; thus, the same belief must have different truth-values.

[35] [2000]: 183. Baker adds a second assumption: "if x and y consists of the same atoms, then they have all the same parts" ([2000]: 183), which is necessary if properties are parts and is problematic, on her view, since same-token properties can be possessed in different ways, allowing for dissimilarity among objects exemplifying same-token properties. I also have a problem with this second assumption–though it is not necessary, on my view, to motivate Burke's concern–because things can have the same atoms without having the same parts. For example, if at time t my body and I have the same collection of atoms in common, then clearly, at that time, my body and the collection of atoms have the same atoms in common. But if this is the case, then by the above principle I am committed to the view that the collection of atoms has as its parts a heart, a pair of lungs, etc. But it is obvious that the collection of atoms does not have a heart or pair of lungs as a part. Thus, the principle is false.

so external to the sum of the thing's parts and their interrelations–e.g., an external relation to an art-world is essential in order for an object to be of the kind statue.

Thus, where Dean Zimmerman has argued that constitution is committed to the view that the physical construction of a thing does not in every case determine kind membership, he is correct, because kind membership is determined by a thing's essential properties, which in turn are sometimes (partly) determined by its relational properties, and these are not fully determined by a thing's physical construction. This is not necessarily true of all objects, but since it is true of some, constitution is committed to the view as Zimmerman describes.

This consequence is also faced by non-constitution theorists. Statues are cases where there are physical indiscernibles–e.g., Thinker and Hunk–that differ with respect to kind and, therefore, with respect to survival or persistence conditions. Moreover, the subvenient physical states are insufficient to account for these differences because they are the same subvenient physical states. This raises what might be called the grounding concern: namely, what grounds the difference in kind. And here I answer, again, that the essential properties of a thing determine its kind membership (and by extension its persistence conditions). Thus, the difference in kind between physically indiscernible objects like statues and their constituent partners is explained by the fact that they differ with respect to their essential properties. Though they do share a host of properties, they do not share all properties, and chief among the properties that they do not share are their essential properties. But that is not unusual, for one would not think that hunks of marble need to be related to art-worlds, nor to a particular shape, in order to exist, though just

this fact is true of statues. Moreover, one would not suppose that a particular set of atoms is essential for a given statue to exist, though just this is the case for collections of atoms.

Thus, while the request for some distinction to ground a difference in kind between an F and an F-shaped constituting matter–where there is no intrinsic difference between the given x and y–is justified, the request is made in such a way as to give priority to a particular kind of required difference as a grounding difference: namely, some sort of intrinsic distinction. However, there are other possible ways that the F and the F-shaped thing can be different that would serve to ground their difference in sort–a difference in essential properties.[36]

B. Intrinsic/Extrinsic

Suppose that the parts of some object bear essential, intrinsic relations to one another just when, say, a lump is present, but bear a nonessential, intrinsic relationship to one another, though an essential form or structure, just when a statue is present. Now, at some time t that same collection of parts has both sets of properties and relations, but the properties and relations are instantiated relative to the instantiation of the related object–in much the same way as Levey's example where particles have chemical bonds and magnetism. When the chemical bonds are present, the chemical object obtains, and when magnetism is present, the magnetism object obtains, and when both obtain at the same time, both objects are present there and then. And further suppose that when some x has

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[36] Of course, there are other options. Mark Johnston mentions several, including common practice of distinction within a linguistic community, difference in bare particulars, difference in formal substrata, difference in haecceities and the like ([92]).

nonessentially related parts, but parts that are essentially related to some given structure, then x is a statue[37], and x is a lump just when x has a nonessential relation to structure and an essential relation to parts, and when both are instantiated, then two objects are present there and then: the lump and the statue.[38]

This example should help to explain the difference in kind, and difference in other properties, between multiple coincident objects from within an intrinsic framework of properties and parts. However, there are objects for which an intrinsic accounting of essential properties is insufficient. Contrary to what I will call the intrinsic principle–for all y and x and F, if y is a paradigm F and x is intrinsically exactly like y, then x is an F[39]–there are objects which are intrinsically just alike but are of different kinds. If the intrinsic principle concerns only spatial parts, then the example given above of a statue and a lump is sufficient to serve as a counterexample to the principle since the two objects are differently related to their parts. But suppose the intrinsic principle also accounts for relations that are intrinsic to an object. In other words, suppose the intrinsic principle accounted for both the parts of a thing and the relations among those parts. Then the

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[37] Of course, on my view this is incomplete and should include other requirements: e.g., art-world, origin, etc..

[38] This example could be enlarged to include other entities present in the same spatio-temporal region: e.g., the collection of molecules, collection of atoms, etc.

[39] Mark Johnston argues against the principle in "Constitution is not Identity", while Harold Noonan argues in favor of it in "Constitution is Identity". Lynn Baker agrees with Johnston in denying the principle, but for different reasons. She offers an example that she thinks is sufficient to show that the principle is false: "suppose that something, call it 'A', with a microstructure exactly like David's spontaneously coalesced in outer space light years away from any comparable mass, now David is a paradigmatic statue and A is intrinsically exactly like David, but A is not a statue" ([2000]: 30 fn 11).

example above would not be an obvious counterexample to the principle. Except, the example is incomplete.

The parts of x and the essential relation those parts hold to a particular form or structure, though not to the collection of parts itself, is not sufficient to guarantee the existence of a statue. Statues, like Thinker, also possess essential extrinsic relations, e.g., to an art-world. In order for Hunk to constitute Thinker, Hunk must be Statue-arranged (formed in the appropriate way) *and* found in Statue-circumstances. Whatever Statue-circumstances includes, it definitely entails that the world in question be an art-world–i.e., a world where the appropriate intentional states, social structures, etc., that are necessary for an artistic community to exist, abound. The principle is false, then, because intrinsic sameness does not entail identity, nor even sortal similarity, no matter the intrinsic scope. It turns out that in some cases, though I suppose not all cases, extrinsic relations are essential for kind membership, as is the case with statues.[40]

C. Constitution and Supervenience

There is much confusion over the relationship between constitution and supervenience as is evidenced by the prolific literature on the subject.[41] Some people think

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[40] And not only statues. Consider the following example from Aristotle's ethics. Generosity is an essential element of a virtuous character. A virtuous person, then, must be a generous person. However, generosity itself is reliant on extrinsic relations: one has to have the means to be generous–the financial means and the opportunity to act generously–which are extrinsic both to the act and to the character. So, the means to be generous is an essential requirement for generosity and generosity is an essential aspect of virtue; thus, a virtuous person must bear certain extrinsic relations in order to be virtuous.

[41] Johnston [1997]; Baker [1999] and [2000]; Harold Noonan, "Constitution is Identity", *Mind* 102 (1993): pp. 133-146; Zimmerman [1995]; Rea [1997d], etc..

that constitution is a relation among properties rather than objects, and so confuse it with supervenience[42], while others simply seek to use the commonly held supervenience thesis as a foil to discredit constitution thinking that constitution is inconsistent with supervenience. In this section, I will briefly address this latter point and in so doing mark out clear territory for constitution apart from supervenience.

According to Michael Rea, the doctrine of microphysical supervenience is the claim that "intrinsic qualitative properties supervene on microphysical structure"[43]–where that structure is simply the total set of the parts of an object and the relations of those parts. The foes of constitution argue that this doctrine is eminently plausible and, as such, offers a considerable challenge to the doctrine of spatial coincidence.

The first avenue of response for the constitution theorist is simply to deny the doctrine of microphysical supervenience–intrinsic qualitative properties do not supervene on microphysical structure. The problem with this is two-fold. First, supervenience is a plausible and widely held theory while constitution is less so on both counts. To deny it in favor of constitution, then, is a non-starter as it would convince none that remained unconvinced already. Moreover, such a denunciation fails to take seriously the charge levied by the foes of constitution. To deny the phenomena across the board, where such phenomena are taken to be counterexamples to the view, especially when such phenomena have behind them a fairly intuitive philosophical thesis, namely, supervenience, is at best specious. If the constitution theorist is to emerge unscathed from the supervenience

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[42] See Baker [2000]: 34 fn 20.

[43] [1997d]: 367.

debate, he or she must meet the alleged counterexamples (charges) head on. Even so, the doctrine of supervenience, as stated, is ambiguous and clarifying the doctrine may well shed some light on the subject, and may allow the constitution theorist to deny one version of supervenience while allowing for another.

The ambiguity lies in the manner of supervenience expressed in the doctrine. For the doctrine of microphysical supervenience

DS: intrinsic qualitative properties supervene on microphysical structure

may mean

DS_{local}: intrinsic qualitative properties locally supervene on microphysical structure

or it may mean

DS_{global}: intrinsic qualitative properties globally supervene on microphysical structure.[44]

Now, DS_{local} is false because there are high level properties that an object, such as a statue, might have that do not supervene in this fashion on the local microstructure of the constituting object or the local microphysical properties. For example, essential to an object's being a statue is that it be related in various and sundry ways to an art-world, and these art-world-type properties are not reducible to the localized microphysical properties of, e.g., the piece of marble. Thus, constitution *is* inconsistent with DS_{local}, but DS_{local} is false, so such inconsistency should not be a problem for the constitution view.

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[44] For literature on the local-global supervenience distinction see Jaegwon Kim, Supervenience and Mind: Selected Essays (Cambridge, England: Cambridge University Press, 1993).

DS_{global}, on the other hand, can account for high level properties like those exhibited by statues since it does not deal with localized intrinsic characteristics but global–world-wide–intrinsic characteristics, and as such is compatible with constitution. In other words, to say that a statue has the property S essentially whereas the piece of clay fails to have property S essentially is just to say that there is no possible world in which Statue exists without S but there are possible worlds in which Piece exists without S. But this is consistent with saying that there are no two worlds which are exactly alike with regard to the distribution of microphysical components (and their relations), but which differ with respect to whether or not an object has S. DS_{global} requires the latter, but only the latter, and so is consistent with constitution.

But suppose the foe of constitution is unmoved. Ultimately, in order for one to show that constitution is inconsistent with the doctrine of microphysical global supervenience (DS_{global}), one has to show that constitution implies the existence of two possible worlds which do not differ with respect to their microphysical properties (including all relations), i.e., that are microphysically indiscernible, and yet in one of those worlds there is an object x that has F and in the other world there fails to be an object x that has F. But such an argument has not been offered as yet, and is likely not forthcoming.[45]

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[45] See also Baker [2000]: 185 passim. Michael Rea argues in a similar fashion, though for different purposes. A corollary to this view: essential properties supervene globally though not (always) locally.

IV. Material Constitution Applied: Baseball and God

One of the questions facing the constitution theorist concerns the extent to which the constitution relation is found in the world. Some, like Levey, argue that while constitution does find a home as a relation among coincident objects, there are few (if any) such objects in fact. I have used a statue, Rodin's The Thinker, and its constituting matter, a hunk of marble, as an example throughout this dissertation to show that constitution obtains as a relationship in at least one kind of everyday, garden-variety object. However, constitution can be used to make sense of the relations among many other types of objects and their related compositional parts: e.g., objects at the quantum level, molecular level (say, objects of chemistry), standard everyday objects beyond statues, social entities, and religious entities, like God (concerning both external relations–God and world–and intrinsic relations–the Triune three and one). While I have neither time nor space to address each of the aforementioned areas, in what follows I will flesh out the relation in two additional areas. In so doing, I will show that constitution is a useful relation at the social entity level with a baseball example (the New York Yankees), and at the religious level with an example concerning the existence of God.

1. Social Entities: Baseball

A similar line of argument as that used to tease out the relationship between Thinker and Hunk can be used for social entities, say, the New York Yankees (the team), and the collection of individuals that make it up. Suppose that the first coach of the Yankees, we will call him Wilbur, is at a New York ballpark observing a collection of individuals a day before selecting, and thereby forming, the very first Yankees team.

Wilbur observes the ensemble of individuals (at t), we can name this ensemble of individuals Group, and returns the next day (at t1) to observe Group again. Finally, after much thought, Wilbur decides to sign every last one of the recruits, i.e., Group, to the team and does. It appears, then, that Group exists at t, but that the Yankees does not exist at t. Suppose, further, that at some later time, say, t2, Wilbur realizes that he has overstepped certain budgetary constraints and so is forced to cut a player from the team. Now it is true that the Yankees exists at t2, but false that Group exists.[46]

Moreover, it looks as though Group and the Yankees have different origins. On the one hand, it looks like Group was created by a process that culminated in the gathering of a collection of interested recruits desiring to try-out for the soon-to-be new team. On the other hand, the Yankees team was created when Wilbur made his selections for the team roster. One can even imagine a scenario where both Group and the Yankees were created at the same time, but via different processes. In addition, Group and the Yankees differ in terms of modal properties. If the Yankees were to be disbanded and Group went west to try-out for the Dodgers, the Yankees would not survive, though Group would. In other words, Group and the Yankees have different persistence conditions. Finally, Group and the Yankees have different essential properties for the Yankees can only exist in sport-worlds, worlds where there are sports and, hence, sports' teams, while Group could exist in worlds without sports, so nonsports-worlds. Even so, Group and the Yankees are

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[46] To make this easier to see, we can imagine that one of the players died, rather than was cut from the team.

remarkably similar, and the reason why Group and the Yankees are so similar is that one constitutes the other.

Looking to our criteria, both a G (Group) and a Y (the Yankees) exist[47], satisfying the first two criteria. Further, I have shown that G and Y are not identical, though they are quite similar. Moreover, it is clear that G is in Y-circumstances. Whatever Y-circumstances might amount to, it certainly includes existence in a sports-world, as we have seen, and the world in question is a sports-world. In addition, we can safely assume that insofar as is necessary, G is Y-arranged. Here the import of Y-arrangement is less clear. This criteria may be satisfied vacuously by virtue that there is no specific arrangement of G that must obtain in order for Y to emerge. While this may be, I think that there is a likely Y-arrangement that G must be in so that Y may emerge: namely, the arrangement necessary to field a baseball team.[48] Finally, it looks like G and Y share all of the same parts. Each individual that is a part of the collection that is called Group is also a part of the Yankees in virtue of the fact that Group composes the Yankees. Even so, there may be parts of the Yankees that are not also parts of Group but, per our earlier discussion, this need not prove a problem. To see why this is so, consider examples of a person and of the Ship of Theseus.

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[47] Of course, there is some debate whether or not social entities have real, ontological being. However, I am here concerned to show only that if they do exist, they are constitutionally related to their compositional "matter" and that my view can adequately describe that relationship.

[48] For example, G must consist of some pitchers, outfielders, infield players and a catcher.

A person and the collection of particles of which she or he is composed do not share all of the same parts, nor does the Ship of Theseus and the collection of wood cells that make up the ship. Take the Ship of Theseus. The boards that make up the ship are parts of the ship, but the boards are not parts of the collection of wood cells that make up the ship. Similarly for the person and the collection of particles that composes him or her. The heart and lungs are parts of the person, but not of the collection of particles. Examples abound in the social realm as well. Take the Battle of the Bulge. The various skirmishes and events that make up the battle are also parts of the battle, but are not parts of the collection of persons and their actions that compose the battle. Similarly, the United States Senate and the United States House of Representatives are parts of the United States Congress, but are not parts of the collection of persons who make up the United States Congress.

Nevertheless, the ship and the collection of wood cells are similar in every respect as if they had the same, and only the same, parts, and this holds true for each of the above examples. Why? Because the "additional" parts had by the ship are only extant in virtue of certain sub-sets of the collection of wood cells which are, as Frederick Doepke argues, "*accidentally* interrelated in ways *essential* to the existence of the 'additional' parts".[49] That is, the presence of the "additional" parts can be wholly explained in terms of accidental structural characteristics within the collection of particles or wood cells or the collection of persons that are necessary for either a heart or a board or a House of Congress to be present, respectively.

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[49]Frederick Doepke [82]: 16.

This works in similar fashion for Group and the Yankees. Since G and Y share all of the same parts or, if Y has some x as a part that G does not also have as a part, then x is constituted by the parts of G, G and Y satisfy the sixth and final criteria. Thus, constitution, as I have defined it, serves to explain the relationship between social entities and their constituents.

2. Religious Entities: God

Not only is the constitution relation useful when explaining the relationship between everyday, garden-variety objects and the more nefarious, though no less ubiquitous, social entities like baseball teams, it is also useful, even promising, in order to provide an intelligible response to some of the more sticky areas in religious discourse. Here I deal with but one such problem area that is related to the Divine: the relationship between God and the cosmos.[50]

A. God and Creation

For centuries, the Christian, monotheistic tradition has sought to clarify the relation between God and world with little success. While various theories rose to the forefront at one time or another, none has achieved the status of orthodoxy and served to provide a complete explanation of the Divine-cosmos symbiosis. At first glance, the constitution relation appears to fare no better. However, on the assumption that God

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[50] In the Greek, *cosmos* means world or universe. In other words, all that is a part of the natural order. I will use the words 'cosmos', 'world', and 'universe' interchangeably to refer to the natural order–the realm of everyday experience and natural science.

Further, in this section I am assuming something like a Western picture of the Christian God. As will become clear, however, the picture I offer is not in every case a classically accepted (or more generally "orthodox") picture of the Divine.

exists and is somehow related to the world, one can use constitution to provide an intelligible explanation of the relationship between God and world while keeping an appropriate tension between the classical notions of immanence and transcendence. On the constitution view, God is a constituted entity with the universe as the constituting entity. To put it in language consistent with the emergence thesis: there is some U such that when U is G-arranged and in G-circumstances, a G emerges.

In accordance with the criteria for my version of the constitution relation, it is apparent that a U exists, and further, *ex hypothesi*, that a G exists. Moreover, since we are attempting to provide an explanation that keeps the tension between immanence and transcendence, the U and the G are not identical.[51] U is G-arranged and in G-circumstances, though just what these include is admittedly unclear. G-arrangement obviously entails the appropriate structure that would allow the emergence of the G. Analogously to what one might take to be a constitution relationship between the brain and the mind, one might suppose that the constituting U must possess (exemplify) a minimal level of structural and/or material complexity. Further, given that the G-arrangement is global, across the entire universe in the case where U is taken to constitute a G, it may well be that in this extreme case there is no distinction between G-arrangement and G-circumstances. In any event, depending on one's view of God[52], different

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[51] Were U and G identical, pantheism (full immanence and no transcendence) would result.

[52] The emphasis here is not on 'view of God' but instead on what God's nature actually is. The problem is an epistemic one. While we may not have sufficient justification to determine just what the nature of God is, however, I show that constitution can make sense of some of the more prevalent pictures, making it all the more useful and

circumstances may be relevant. One might assume, for instance, that the Divine is a mere social construct, in which case the presence of intensional agents would be included as a necessary G-circumstance. On a classical picture of God, however, the presence of intelligent agents is not a necessary prerequisite of God's existence and so would not be considered relevant to the G-circumstances in which the U must find itself in order for the G to emerge.[53]

Finally, the G has the sum of the parts of U as its parts, and, if any additional parts remain for the G–some of which I will outline later–then U, or some portion of U, constitutes those parts as well.[54] This is consistent with the Divine notion of immanence. Given that U includes all physical parts whatsoever and G shares all such parts with U, there is no portion of the natural world in which God is not to be found at all. According to the Doctrine of Presence, God is present throughout the natural order. In accord with my view of constitution, the G has all the parts of U as parts. Therefore, every part of the universe is also a part of God. It does not follow that every part of God is a part of the universe, though every part of God is constituted by parts of the universe. Thus, the notion of transcendence is also cared for. God is an emergent entity on God's constituting object, the universe. There are some parts of God that are not also parts of the universe.

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promising as an explanatory relation with respect to the Divine and the natural order.

[53] While the criteria of G-arrangement and G-circumstances are admittedly sketchy, this is an epistemic conundrum and not a problem for the metaphysical picture I am offering here.

[54] As I understand it, this commits me to a naturalized view of God which, far from negative, I take to be a positive outcome.

As a quick example, the Holy Spirit is a part of God though not a part of the universe. In addition, there are some things true of God that are not also true of the universe. For example, it is true of God that God is worshiped among Christian congregations as the wholly Other, one who transcends the parameters of the natural order, this is not true of the universe. All such ramifications are consistent both with the Doctrine of God and with my version of the constitution relation.

There are certain properties that are related to classical doctrines which are attributed to God that are not obviously consistent with the picture on offer here. I will address two of them: God as a necessary existent and God as creator. One of the properties that God is said to have is the property of being a necessary existent. But on my view, if G exists, then there is some x such that x is a U and x is G-arranged and in G-circumstances. So that, if G is a necessary existent, then so too must U always exist and be a necessary existent. Moreover, not only must U exist, U must always be G-arranged and in G-circumstances. While this is admittedly counterintuitive on its face, and apparently inconsistent with a classical picture of God, I do not think this mitigates against the usefulness of my constitution picture for explaining the relationship between God and the natural order.

First, I will address the counterintuitive nature of claiming that the universe is a necessary existent. While this may go against certain beliefs held dear by various religious communities, it does not obviously go against either modern science or our best modal intuitions. To be sure, not all contemporary scientific models necessitate the existence of the universe. Some do–e.g., oscillating universe theory–and some do not–e.g., big bang.

Moreover, there is no principled way to prove scientifically whether the universe in fact possesses such a property or not. Modal claims are always beyond the ken of science. Therefore, the claim that the universe is a necessary existent is consistent with modern science.[55] Nor is it necessarily out of sorts with our modal intuitions. True, it does come close to equating physical modality with metaphysical modality, but no more so than does a Kripkean analysis of modal language starting, as it does, from the actual world. On a Kripkean analysis, possible worlds are not "real" entities existing somewhere in logical space. They are, rather, ways the actual world might have been. To say, then, that God is a necessary existent is just to say that this world, the actual world, cannot fail to be in G-arrangement and G-circumstances. While I admit that I cannot see my way clear to a proof that this is the case, I also have grave doubts about the viability of arguments to the contrary. Further, the burden of proof is not on me. Recall that I am operating under the assumption that God exists and is a necessary being, and am merely showing how both can still be true on my picture of the constitution relation. This I have done.[56]

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[55] While such a claim is not verifiable according to scientific method, it is assumed by certain scientific theories. Were the theory(ies) that assume U as a necessary existent to prevail among the going contemporary theories, this would indeed bode well for the plausibility that U is in fact a necessary existent. However, it would not guarantee such as there is always the possibility that some further scientific model might emerge that is preferred and does not assume U as necessary existent.

[56] This may well come down to a difference among intuitions (modal and otherwise). My guess is that those who hold that God exists and is necessary, and that God is constitutionally related to the universe, will not find this consequence too difficult a pill to swallow. Moreover, I am not here trying to persuade any other (e.g., atheist, foe of constitution, etc.).

Second, the classical doctrine of *creatio ex nihilo* does appear to be inconsistent with a universe that necessarily exists. Developed so as to deny a Platonic dualism within early Christianity, *creatio ex nihilo* holds that God creates the natural order out of nothing; thus, no matter pre-exists the creative act. But why should we think that the doctrine of *creatio ex nihilo* is true? First, on some interpretations, it does not accord with Holy Scripture. Take, for example, Genesis 1:1, "In the beginning when God began to create the heavens and the earth, the earth was a formless void and darkness covered the face of the deep while a wind from God swept over the face of the waters".[57] Here it looks as though there was formless matter prior to God's creative act. On this reading, creation just is God's act of forming the recalcitrant matter–not unlike the Platonic picture. On the one hand, if one were to bring *creatio ex nihilo* in line with this interpretation, one could argue that what God creates out of nothing is form, not substance. On the other hand, one might think that if *creatio ex nihilo* does not accord with Holy Scripture, so much the worse for *creatio ex nihilo*.

Now, suppose we simply discard the doctrine–there are a number of Christian communities that do not affirm the doctrine either because they deny it or they do not know it exists–we are still not out of the woods. Whether or not Christian communities affirm *creatio ex nihilo*, the vast majority affirm that God is creator and one assumes that

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[57] The New Oxford Annotated Bible: With the Apocrypha (NRSV), edited by Bruce Metzger and Roland Murphy (New York, NY: Oxford University Press, 1991): Genesis 1:1, optional reading (a).

a creator must precede his or her creation, which is impossible on my view of God.[58] On my view, the best we can hope for is eternal concurrence–mutual existence throughout time. But as we have seen, there is more than one way to interpret a creative act. When Rodin created The Thinker, he did so by sculpting the marble, not by creating the lump of marble. The same could hold true for God. God would still be considered the creator of the form of the natural order, without pre-existing matter altogether, if the act of creation is taken to be the act of giving structure or form to matter which is unformed, rather like the Platonic notion.[59] Thus, the Christian view of God as creator is consistent with a constitution view of God's relation to the natural order.

V. Conclusion

While Levey and Rea offered important elements for a robust picture of constitution, neither extended his view far enough to account for all constitutionally related phenomena. Missing from both views were the external relations necessary to account for the constitution relations of, say, statues and their constituent lumps of matter or baseball teams and their related collections of individuals. I offered a view that accounts for both kinds of relations when assessing the essential properties of objects; thus, providing a robust theory of constitution that is broad enough to account for the wide-ranging, constitutionally related phenomena in the world.

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[58] Not all creation doctrines require God's precedent existence. It is even easier to see how constitution comports with theories lacking such a requirement.

[59] Of course, this does leave open the question of what G-arrangement and G-circumstances would amount to on this picture, but that is, as I have said, a different matter.

Chapter 6

Conclusion

When asked how many statues are present in the space now occupied by Rodin's *The Thinker*, most patrons of the arts would answer that one statue is present, and they would be correct. When asked how many objects are present in the same space, most patrons of the arts would again answer that one object is present, and they would be wrong. In fact, there are at least two objects present in that space: Thinker and the hunk of marble that composes it, or Hunk. There are likely more than two objects, but there are at least two.

That such a conclusion strikes many as counterintuitive is understandable. Humans like to comprehend their surroundings, and few things are more (or as) intuitively evident to us than how we parse and count objects in the world. Even so, as we apply the technical identity relation to objects, we find that where we often counted but one object, more than we initially expected are present. We know this because objects, like statues, have different properties than their constituent cousins. Statues and the stuff out of which they are made share many of the same properties, but not all of the same properties. Thus, statues, like Thinker, and the stuff out of which they are made, like Hunk, cannot be numerically identical. In this dissertation, I argued that another relation obtains between such objects: namely, constitution.

In Chapter 2, I looked at several of the puzzles that give rise to material constitution: the Ship of Theseus, Tibbles-Tib, and Lumpl-Goliath. I argued that the Ship of Theseus does not raise the problem of material constitution, at least not how Michael Rea states the Ship of Theseus puzzle. Both Tibbles-Tib, restructured to be about Tibbles and its body, and the Lumpl-Goliath puzzles do raise the problem. In addition, both preclude various attempts at resolution of the problem. The Tibbles-Body puzzle ultimately precludes resolution by either denying the existence of garden-variety objects, the existence of Tib-like objects, or the transitivity of identity. The Lumpl-Goliath puzzle precludes resolution by favoring perduring objects over enduring ones; thus, the four-dimensionalist is in no better position *vis-à-vis* the problem of material constitution than is the endurantist. With the problem thus motivated, I turned in the ensuing chapters to evaluate various accounts of the constitution relation, which is the relation I favor to resolve the problem of material constitution.

In Chapter 3, I addressed two statements of the constitution relation. The first, offered by Frederick Doepke, is an attempt to explain the relation between macro objects, like ships, and the collections that compose them, whether the collection of planks or the collection of wood molecules, and to answer the challenge of the eliminitive reductivist account of the relation between such objects. I argued that Doepke's account is incomplete, and that his argument against the reductivist fails to find its mark, even though the reductivist must ultimately appeal to the existence of constituted objects to counter Doepke. I then considered the mereological statement of the constitution relation offered by Judith Jarvis Thomson. While Thomson's account is complete, it commits the

constitution theorist to the existence of a host of questionable ontological entities called fusions. I took Ockham's razor to her account and argued that a statement of the constitution relation that allows for a more parsimonious ontology is preferred if such is available.

In Chapter 4, I offered an extended treatment of one of the more interesting, and novel, statements of the constitution relation to come out in recent years. Lynne Rudder Baker offers an account of the relation based on the sharing, or borrowing, of properties between constitutionally related objects. The twist she offers is that property borrowing goes both directions: bottom-up and top-down. I argued that top-down borrowing is unwarranted, especially for what she calls primary-kind properties, and that her unified view of constitution ultimately dies the death of a thousand qualifications.

In Chapter 5, I looked at two intrinsic theories on offer of late prior to stating my own view. Both of the intrinsic theories have valuable components, but ultimately fail to provide a sufficiently robust picture of constitution that can account for all constitutionally relevant phenomena. In order to account for paradigm cases of constitutionally related entities, like statues and the stuff that composes them, I argued that one must make room for the exemplification of essential properties that are based on an object's external relations. Thus, I offered an account of constitution that makes room for the extrinsic features of an object to play a role. Further, I showed how my account explains both the similarity and dissimilarity that obtains between constitutionally related objects, and argued that constitution, as I define it, is consistent with supervenience. Finally, I used my account of the constitution relation to make sense of garden-variety, everyday objects, like

statues, as well as not so garden-variety objects, e.g., social entities, like baseball teams, and religious entities, like God. Ultimately, I found that constitution is indeed a ubiquitous relation that may help us to understand the relationships between a great many things: persons and their bodies, minds and brains, the three and one of the Holy Trinity, etc..

The overall structure of my argument, and hence dissertation, has been to motivate the problem of material constitution and the need for a statement of the constitution relation to resolve the problem. Once the need for the constitution relation was motivated, I looked at five of the more important and/or recent attempts at offering a picture of constitution and found them all wanting; thus, highlighting the need for an additional statement of the relation. I concluded by arguing for a statement of constitution that accounts for the vast and diverse phenomena that exemplifies it in the world.

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