Against Organicism:

a defence of an ontology

of everyday objects

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Declaration

I, Sean Lastone Michael Jennings, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

This thesis claims that attempts to eliminate everyday objects from ontology on the basis of *a priori* reasoning about the composition relation fail. The thesis focuses on the positions of 'Organicist' philosophers; philosophers who argue that all that exists are organisms and microscopic (or smaller) mereological simples.

Organicist positions have two key foundations: 1) arguments from compositional failure, which conclude that there are no everyday objects because (it is argued) there are no non-living composite entities. 2) A rhetorical move, the 'O-arranging manoeuvre', whereby it is claimed that the elimination of everyday objects from our ontology would make 'no-difference' because object-wise arrangements of mereological simples take their place.

The thesis maintains that arguments from compositional failure should be reinterpreted as arguments to the conclusion that the notion of 'composition' being employed by Organicists is inadequate for the purposes of metaphysics. A minimal alternative account of everyday objects is posited. It is shown that by deploying the O-arranging manoeuvre Organicists (and other Eliminativists) commit themselves to all that is required on the presented account to entail the conclusion that everyday objects exist.

The thesis concludes that there are everyday objects. It suggests that we should reject the idea that composition is what matters in ontology, but if one does not then the thesis gives reasons for rejecting compositional ontologies that entail the non-existence of everyday objects.

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Figure 1: A colour continuum: p. 210

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Introduction

'Organicists' are committed to the claim that although there are people, strictly speaking none of them are wearing clothes. For Organicists claim that the only things bigger than an atom that exist are living things. Organisms exist, they claim, but clothes, cups, mountains, pebbles and lakes do not. Trees exist, but firewood does not. Apples cease to exist once plucked from the tree. People exist, but corpses do not[1], and so on.

It is important to be clear: this is not a sceptical claim. It is not the claim that we do not have sufficient reason to believe in everyday objects or the claim that we cannot *know* that there are everyday objects. It is the stronger claim that there are no non-living objects. Simply put, the claim is that they do not (and in fact, could not) exist. Here the claim that there are no non-living everyday objects will be termed the 'negative ontological claim' (we can contrast this with the Organicists' positive ontological claim, which is that there *are* living things).

The notion of an 'everyday object' is a mundane one. Everyday objects are just those things that make up the world, or, not to beg any questions against the Organicists, those objects which we normally (pre-philosophically) take to make up the world. They are things such as tables, chairs, pebbles, tomatoes, mountains, planets, seas, haberdashery, soft-drinks, and galaxies. They are the particular things with which we interact in the ordinary course of living our lives[2].

The negative ontological claim seems self evidently false. It seems self evident that there is a computer that I am typing this upon, that I travel places on trains,

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[1] This example is due, I am told, to Katherine Hawley.

[2] For the purposes of this thesis, I will often restrict application of the term 'everyday object' to just those non-living objects that Organicists deny the existence of. It should be clear from the context where I do this.

that I am drinking a mug of tea and so on. We might ask: if there are no everyday objects how are we to account for the way that the world seems and for our interactions with it? How do we account for the causal activities of everyday objects?

Organicists respond to these sorts of challenges, and attempt to make the negative ontological claim plausible, through a dialectical trick that will here be termed the 'O-arranging manoeuvre'. The O-arranging manoeuvre works by replacing objects with mereological simples or atoms (i.e. things without parts— we shall see shortly that this notion is more problematic than the Organicists suppose) arranged 'object-wise'. So according to the Organicists, although my computer does not exist, there are simples arranged computer-wise which have cooperated to do all the things that I would normally take a computer to do; there is no chair to support my weight, but there are simples arranged chair-wise to support me. The O-arranging manoeuvre enables Organicists to argue that a world without non-living everyday objects would seem to us just as the world actually does. It enables them to treat the question 'what objects are there?' as a metaphysical rather than a physical question.

Despite the incredulous stares which a bald statement of the position can give rise to, Organicism is a popular position in contemporary metaphysics. While it is difficult to say how many adherents it has, it has, for the most part, been accepted as one of the viable positions with respect to the ontology of everyday objects. It is also influential: Organicists are among the main proponents of an approach to the metaphysics of everyday objects that we could call 'compositional ontology'. The idea of the approach is that we can discover what things there are in the world through *a priori* reasoning about composition. Organicism's two main proponents are Peter van Inwagen[3] and Trenton Merricks.

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[3] Van Inwagen's 1990 *Material Beings* has 366 citings listed on Google scholar, and Merricks' 2001 *Objects and Persons* has 127 citations (search date: 21 May 2009).

The notion of compositional ontology will be discussed in some detail in Chapter One. According to a compositional ontology the best way to answer the question 'what everyday objects are there?' is to first answer the question 'what composite objects are there?'. Because any macroscopic objects must be composite, the thinking goes, answering this question will tell us what macroscopic objects there are.

The idea that there are no non-living everyday objects is strengthened by appeal to traditional puzzles about everyday objects such as the Ship of Theseus puzzle, the sorites paradox, and the 'problem of the many'[4]. These puzzles can be construed as puzzles about composition.

The problem of the many[5], for example, is premised upon the possibility that for a given object it may be unclear precisely which atoms compose it. Consider a particularly crumbly cookie for instance. Maybe we could imagine a cookie so crumbly that it was in fact entirely composed of crumbs. If we take some crumb on the edge of the cookie, it might not be entirely clear whether or not that crumb is 'part' of the cookie. There may be a number of crumbs like this. When we refer to the cookie then, which particular collection of crumbs are we referring to? Is it the collection of crumbs which includes that one on the edge or not? It seems that we have two candidate cookies that we could be referring to. We could be referring to the cookie composed of all the other crumbs except the one on the edge, or we could be referring to the cookie composed of all those crumbs and the one on the edge. What is more, it seems that for any of those crumbs on the edge we can ask a similar question. Are there indefinitely

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[4] The Ship of Theseus puzzle and the sorites paradox are discussed in Chapter Seven, where the use that Merricks and van Inwagen make of them are discussed. The sorites paradox is also appealed to by Unger and Wheeler in their denial of everyday objects (see (Unger 1979), (Unger 1979) and (Wheeler 1979) for uses of the sorites to deny the existence of everyday objects).

[5] See (Unger 1980) and (Lewis 1993).

many cookies that we could be referring to? The Organicist answer is simple—there are no cookies, and so there is no cookie that we are referring to.

The debate about the existence of everyday objects then, is located at the nexus of a number of different issues. Issues about composition, about the right way to do metaphysics, issues arising from the traditional problems concerning objects, the question of what it is (if anything) we pick out when we talk about objects and whether it is really plausible to suppose that the world would be the same regardless of whether or not it contains everyday objects. Showing how the Organicist thesis can be challenged will provide us with a more secure basis for investigating these issues.

This thesis offers a number of challenges to Organicism. In Chapter One compositional ontologies are examined in some detail. It is noted that Organicists do not offer us any sort of analysis of composition; in fact, van Inwagen suggests that there is no such analysis to be found. It is argued here however, that this is a weakness in a compositional ontology. It leads to a problem in making sense of the notion of a mereological simple. If we are going to determine what things there are in the world by determining the occasions when mereological simples compose other things, then we had better be able to specify what it is for something to be a mereological simple. Standardly, a mereological simple is taken to be a thing without parts. But in the mereological systems which form the background to compositional ontology the 'part' relation is a basic notion. Such systems do not offer any way to determine it. Given this, we can raise a legitimate question about what things are supposed to be simple. What is more, once the impoverished notion of composition that the Organicists are appealing to becomes clear we can present them with the following challenge: Why should we suppose that everyday objects are composite rather than simple? It is argued that while the conclusion that everyday objects are simple is not an obvious one, it is at least as plausible as, and is preferable to, the conclusion that there are no macroscopic objects.

In Chapter Two a property bundle theory of everyday objects is developed, as is the basis for a theory of object concepts. It is argued that our object concepts are both generated in response to, and satisfied by, regularities in our environment that can be thought of in metaphysical terms as bundles of (sparse) properties. The challenge is then presented to the Organicist to say what more is necessary for there to be objects than our object concepts being satisfied by the environment that we live in.

Chapter Three builds on the previous chapter by showing how the theory of objects presented in that chapter is consonant with traditional empiricism. In particular it is noted that the theory developed there fits nicely with the way that J. L. Mackie reconstructs Locke's view of everyday objects. It is suggested then that there is nothing especially radical about the theory presented in Chapter Two, and that it merely locates and brings to bear resources for responding to the Organicist which were already available to empiricists.

In Chapter Four the O-arranging manoeuvre is discussed in detail. The manoeuvre is shown to be an essential part of the Organicist position and to entail a number of commitments on the part of Organicists which will make it difficult for them to respond to the theory of objects presented here. In particular, it is argued that the O-arranging manoeuvre commits the Organicist to the existence of sparse properties that are coordinated in the way that we require them to be for us to conclude that there are objects. Given this sort of coordination, it is argued in Chapter Five, that it is difficult for Organicists to give a principled objection to the claim that what satisfy our object concepts are complexes of properties that are themselves the causal consequence of arrangements of simples.

Chapter Six responds to arguments from over-determination that are presented by Trenton Merricks and Cian Dorr. Dorr and Merricks argue that we should eliminate everyday objects from our ontology because we can account for all of their causal activities in terms of the activities of their parts and they are hence

epiphenomenal. In response it is noted that in order to be both valid and plausible, such an argument must rely on a hidden premise to the effect that objects are causally independent of their parts. Since it is clearly false that objects and their parts are causally independent it is concluded that Dorr's and Merricks' arguments are unsound.

Finally, in Chapter Seven two of the puzzles concerning everyday objects are discussed. Both Merricks and van Inwagen claim that a strength of their position is its ability to deal with the puzzles about everyday objects. The basis of this is simple: if there are no everyday objects, then there can be no problems concerning their composition. It is argued in Chapter Seven that while the details of the Organicists' positive ontological claims may benefit them in dealing with the puzzles, they do not enjoy a significant advantage over other positions by virtue of their negative ontological claim. In particular, problems that arise for other positions with respect to everyday objects still arise for Organicists with respect to living things. What is more, problems that arise at a level of metaphysics for theories that take everyday objects to exist, re-occur as issues in semantics for Organicists. To the extent that there is a problem about whether some object persists, for example, there is a problem for Organicists in making sense of our linguistic practice in referring to the same thing at different times.

This thesis, then, presents two complimentary challenges to Organicism. The first challenge is to the notion that we can determine what there is by *a priori* reasoning about composition. The challenge is: Given the very thin notion of composition that Organicists are appealing to, why should we suppose that everyday objects must be composite? Why could they not be (in the sense of composition being used) simple?

In the second half of this thesis it is argued that our object concepts are, as a matter of fact, satisfied and that by utilising the O-arranging manoeuvre Organicists make it difficult for themselves to coherently deny this. The second

challenge then is this: If our object concepts are satisfied by our environment, what more is needed for us to conclude that there are everyday objects? The Organicists' standard answer is that in order for collections of simples to give rise to objects they must compose something. But here I argue that is false, given the notion of composition utilised by Organicists.

Chapter One: Organicism and compositional ontology

Recent metaphysical literature on everyday objects has spawned theses about what there is that are very much at odds with what, pre-philosophically, most people seem to believe. Thus, we have 'Universalists' claiming that for any n number of objects there is an n+1th object which they compose and 'Eliminativists' arguing that there are no everyday objects at all. The main target of this thesis is Organicism; the thesis that the only things that exist are mereological simples (i.e. things that do not themselves have parts) and living things. The arguments advanced in favour of Organicism, however, exemplify a certain approach to ontology, which can be termed 'compositional ontology', and this too will be criticised.

This chapter introduces compositional ontology and Organicism and will suggest that they are not conceptually well founded. In particular, we will see that Organicists lack an account of what composition is. It will be suggested that given this they are also unable to give an account of what 'simples' are, or to give a principled objection to the idea that everyday objects are in fact functional simples.

Section 1.1 introduces compositional ontology as a metaphysical approach and uncovers some of the commitments that are associated with it. In 1.2 some of the theoretical background to the Organicist position is laid out and in section 1.3 we show that there are a number of ways to think about parts and wholes in addition to that which seems to be appealed to by the compositional ontologists who are the target of this chapter. It is suggested that whenever we talk about 'parthood' in the context of metaphysical theories we are, to a certain extent, using the expressions 'part' and 'composition' in a technical way.

One of the most influential aspects of van Inwagen's treatment is the way that he frames the questions. His claim is that the important question to answer is the one that he terms 'the Special Composition Question'; the question, that is 'when do some things compose another thing?'. This question is central to the approach to metaphysics that is here termed 'compositional ontology'[6]. Section 1.4 shows how focusing on the Special Compositional Question, to the exclusion of other questions about composition, skews the discussion of everyday objects. Section 1.5 examines what we can learn from answers to the Special Compositional Question, and it is argued that the Organicists' purpose in examining the question is to find support for their negative ontological claim, rather than to make discoveries about the nature of those composite objects that they do think exist.

Having laid out the bones of the Organicist position in sections 1.1 to 1.5, the last three sections of the chapter make the case that the conception of composition that the Organicist appeals to is weak in two significant ways. Firstly, it faces a difficulty in giving an account of what 'simples' are, and secondly, in resisting the claim that everyday objects are in fact simple. I argue

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[6] As Hawley puts it (Hawley 2006) van Inwagen's *Material Beings* is 'agenda setting'. The reason for this is at least in part the way that he frames the questions.

that the claim that everyday objects are simple, while not ideal, is a more natural conclusion to draw then the conclusion that there are no everyday objects.

1.1   Compositional ontology

It has become common to present discussion about the ontology of everyday objects as turning upon which of a number of competing theses about composition is correct[7]. Three possible theses are exhaustive of the possibilities with respect to composition, and those philosophers who will here be termed 'compositional ontologists' hold correlative ontological theses. The available options concerning composition are:

- Unrestricted Composition
- Restricted Composition
- No Composition

(Terminological note: these names will be used to pick out the theses about composition, which can be considered independently of their ontological correlates).

Unrestricted Composition claims that there is no limit on composition: any two things automatically compose a third thing. The usual examples given of this are odd combinations of physical objects (with socks and the Eiffel Tower being popular choices). Thus, we might, in order to highlight the supposed implausibility of this position note that it entails that there is an object composed of my phone and the Pope's left hand. In fact, these sorts of consequences only follow if you think that objects such as the Pope's left hand

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[7] Although there is a well established meta-ontological literature questioning the basis of metaphysical debates in general and this debate in particular. See for instance, (Carnap 1950), (Quine 1951a), (Yablo 1998), (Dorr 2005), (Azzouni 2007), and the recent collection, (Chalmers, Manley and Wasserman 2009). While meta-ontological questions will not be discussed explicitly in this thesis (though they are touched on at the end of Chapter Six), it should become clear that there is a meta-ontological position which informs the position taken here.

and my phone just are their parts; if you think that there is more to my phone than its matter, then the story would need to be more complicated. A more careful formulation might not mention the Pope's hand and my phone directly. People who accept Unrestricted Composition are not committed to talking about phones or hands at all. What they are committed to is that the things (presumably matter) that compose the Pope's hand (however picked out) and the things (again, presumably material) that compose my phone (however picked out), also (together) compose a third thing.

'Universalism' is the ontological correlate of Unrestricted Composition[8]. If any two objects compose a third object, and we can take the objects over which the existential quantifier ranges to be either composite objects or simples, then it would seem to follow trivially that whenever there are two objects, there is a third object which is the composite of both of them.

'No Composition', as might be expected, is the claim that no composition takes place. This can be taken to entail 'Eliminativism'; the thesis that there are no composite objects. Recent defenders of this view are Cian Dorr (Dorr 2002) and Keith Hossack (Hossack 2000), and Peter Unger has held a closely related view (Unger 1979)[9].

Finally, Restricted Composition is the thesis that composition only happens sometimes[10]. Some things taken together compose other things, the thought goes, and some things taken together do not compose anything. This might be supposed to be the pre-philosophical starting point of most people with respect to composition. In order to get from restricted composition to a generalizable

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[8] Two recent philosophers who take Universalist positions are David Lewis (see (Lewis 1991)) and Theodor Sider (see (Sider 2001)).

[9] Unger held that while there are no everyday objects such as tables and chairs, there may still be material things. In more recent work (e.g. (Unger 2006)) Unger has moved away from his nihilist position with respect to everyday objects.

[10] Merricks and van Inwagen hold the Organicist version of the position. Responses closer to a 'naïve' view have been defended by Markosian (Markosian 1998a) and Sanford (Sanford 1993).

ontological thesis, however, one needs an account of under what conditions composition takes place.

Organicists hold a controversial version of Restricted Composition: they hold that those bits of matter that make up living things succeed in composing something, but that other bits of matter do not[11]. Because there are no non-living composite objects, according to the Organicist we should conclude that there are no non-living everyday objects. They infer the non-existence of everyday objects from the failure of other matter to compose anything. (They have other reasons for rejecting everyday objects as well, these are addressed in Chapters Six and Seven).

We can see then that both Eliminativism about everyday objects and Organicism derive part of the reason for their negative ontological claims from theses about composition. They infer from their conclusion that there are no composite objects (or there are no non-living composite objects) the conclusion that there are no everyday objects (or there are no non-living everyday objects). Another reason they can give to support their negative ontological claims derives from traditional problems about everyday objects, such as the Problem of the Many, the Ship of Theseus and the sorites paradox. These arguments, while being concerned with the endurance of everyday objects, can also be understood as concerning the composition of objects. The Organicist and Eliminativist theses are supposed to help with these puzzles by obviating the need for them: the Eliminativist about everyday objects need not say which collection of crumbs is identical to the cookie, because they do not think there are any cookies. (Though Chapter Seven of this thesis challenges the claim that

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[11] Van Inwagen holds that simples that constitute a life compose something. Merricks' thesis is slightly different, though here I will ignore these differences where they do not affect the main line of argument presented. Merricks holds that simples compose something just in case there is an emergent property of an object constituted by the simples that cannot be attributed to the joint action of the simples. He argues that consciousness is such a property. Merricks' position is slightly mysterious: if the simples are not responsible for the emergent property, why should we think they have anything to do with it or that they are parts of the object exhibiting it?

Organicism does better than other theories with respect to the traditional problems concerning objects).

We can term the style of thinking that takes one from theses about composition to theses about what there is 'compositional ontology'. Compositional ontology is an approach to ontology rather than a thesis. However, one can identify a number of assumptions held in common that we can treat, for the purpose of argument, as a doctrine to be examined. Merricks (Merricks 2001) and van Inwagen (van Inwagen 1990) both participate in this approach, arguing for an Organicist ontology on the basis of claims about composition.

The attractive idea behind compositional ontology is that one can establish what there is by establishing firstly what, if any, things are mereologically simple, and secondly, when it is the case that some things compose other things. The idea is attractive, not least, because it gives philosophy an important role in finding out what entities there are in the universe and reinstates metaphysics as an important sub-discipline in philosophy. More importantly, the idea is attractive because it suggests that a certain level of theoretical economy is possible in ontology: if we could find *a priori* rules determining when some things compose other things, then we would have a way of determining *a priori* what there is. Arguably, the theses about composition that were listed above enshrine the sorts of rules necessary for this project. Unrestricted composition and No-composition allow for ontological conclusions with relatively few additional premises, as does restricted composition when supplemented with a principle such as the Organicists' saying when it is that composition takes place. The methodology of compositional ontology then, is to argue in favour of a preference for one rule or collection of rules about composition rather than another on the basis of its utility in dealing with philosophical problems.

In order for compositional ontologists to make good on their claim that they can underwrite ontological theorising with theorising about composition, they must accept two major commitments.

Firstly, compositional ontologists are committed to there being state-able rules for composition (such as restricted composition and unrestricted composition). That is, they are committed to the possibility of rules saying when it is the case that some things compose other things. These rules must be comprehensive: they must give a uniform account of every case where some xs compose an object. If there are no such rules then the compositional ontology approach has no hope of success. What is more, given the way that compositional ontologists actually go about trying to find these rules, it seems that they must be discoverable *a priori*. Compositional ontology is a metaphysical rather than a physical science approach to finding out what things there are.

When put in these terms it seems questionable whether there really are such rules. Even supposing that there are, one might think that they would have to be found through empirical research. Why would one think that the best way to find rules of composition is to think about it, rather than to empirically examine the physical structure of those things that we take to be composite and discover whether or not they have something in common? Such an approach may not be philosophical, but philosophical analysis of the concept of composition would certainly be required as a part of it. Such an approach would almost inevitably result in far more complicated (and messy) theories than those put forward by compositional ontologists. What is more, such an approach might discover that there are no such rules. Markosian (Markosian 1998a) argues convincingly that composition is 'brute', which is to say, that there are no state-able rules governing when it occurs. The basis of his argument is that the theories arising out of a compositional ontological approach are each, in their way, problematic. While this line of attack will not be pursued here, it is worth asking why it is that it has seemed even initially plausible that there are such rules of composition[12].

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[12] Or why we should think that one rule applies to all physical things, (Simons 2006) argues that there are different rules or principles for different sorts of thing.

The second of the commitments of compositional ontology is that there must be some way of getting from rules about composition, to facts about what objects there are. This may be plausible, even trivial, in an ontology where the only acceptable objects of quantification are mereological simples and sums. It is not nearly so trivial with respect to everyday objects. One of the claims argued for in this thesis is that there is no straightforward way to infer facts about the existence (or not) of everyday objects from rules about composition.

Compositional ontology could be considered the dominant contemporary approach to the metaphysics of everyday objects. An important part of the background theory for the approach is a collection of theories about parthood that can, following Simons (Simons 1987), be termed 'extensional mereologies'. Simons uses the term 'extensional mereology' to pick out systems of mereology that are either similar to, or variations of, those of either Leśniewski or Leonard and Goodman. He uses the terminology for formal and historical reasons: the authors' intention was that the systems be similar to the Boolean algebra and their form displays a tendency towards an extensionalist approach to logic. In particular, they take it to be the case that things with the same parts are identical. Simons also notes a 'pun' ((Simons 1987) p. 7) on the word 'extend', which motivates the term's use here. As he says:

> 'The most appropriate interpretation for extensional mereologies, one which renders all their axioms plausible, is one in which the singular terms of the theory stand for spatial, temporal, or spatio-temporal extents or for extended matter'. (Simons 1987) p. 7

Though Leonard and Goodman are quite clear that they intend their Calculus of Individuals to apply to anything that could plausibly be considered an individual

(including times, places, objects, and properties) it is the pun which motivates the use of the term in this thesis[13].

1.2 Organicism and Extensional Mereology

In this section we will see that Organicists share some background assumptions about the parthood relation with extensional mereologists. Organicists hold that composition is restricted, and therefore reject the claim that any two objects will compose a third. However, both Merricks and van Inwagen accept 'extensionality', the claim that any objects with exactly the same parts are identical, and they accept the transitivity of the parthood relation. Moreover, as we shall see, the definition that van Inwagen gives of 'composition' is very much in line with extensional mereology. We shall see in Sections 1.4 and 1.5, however, that there is little to the Organicists' notion of part beyond the formal constraints of mereology and the idea of what van Inwagen terms 'principles of composition'.

Leonard and Goodman's Calculus of Individuals is intended by them to be formally equivalent to Leśniewski's mereology[14] but is formulated in the supposedly more intelligible language of Russell and Whitehead's *Principea Mathematica*. Leonard and Goodman argue that their version of the Calculus of Individuals offers a useful way to give an account of so called 'multigrade' relations; that is, relations that, rather than having a fixed number of arguments (such as a 'is married to' which is a two place relation), can be used to relate different numbers of things[15]. Arguably composition is one such relation, so

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[13] What is at stake in Organicist discussions of the ontology of everyday objects is a notion of composition which is applied to physical entities or extents.

[14] See (Leonard and Goodman 1940) p. 46, they in fact take it to be 'formally indistinguishable' from Leśniewksi's 'theory of manifolds'. Though as noted in (Simons 1987) the logical underpinnings of Leśniewski's mereology are quite different from the Calculus of Individuals. Simons gives a detailed discussion of the similarities and difference between these accounts, as well as some others.

[15] Since, the logic of plural reference has been developed, and is arguably a better tool for dealing with multigrade relations without incurring ontological commitment see (Hossack 2000).

Leonard and Goodman can be seen as utilising the formal account of the part whole relation that Leśniewski had developed in order to approach technical problems concerning other relations. Leonard and Goodman, at least in (Leonard and Goodman 1940), treat the notion of composition involved as ontologically innocent.

When Leśniewski himself developed the formal theory of mereology, however, he was engaged in a much more ambitious undertaking[16]. His aim was to develop a formal system that could act as the foundation for mathematics, but which did not require us to posit classes, which he regarded as the cause of Russell's paradox[17] and of being unacceptably abstract. Thus, Leśniewski wanted wholes to do for him what Russell required sets and classes to do; to collect individuals. While Leśniewski's system can be construed as an analysis of the 'part-whole' relation, its intended use means that the part-whole relation articulated was required to have certain formal properties[18].

For instance, formal mereological systems treat the part-whole relation as transitive. That is, if some thing A is a part of B, and B is a part of C, then it is taken to follow that A is a part of C. A more fundamental point (and a point with which Organicists agree[19]) is that mereology is 'extensional'[20], that is, that

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[16] See in particular, Leśniewski's 'Foundations of a General Theory of Sets' and 'On the Foundations of Mathematics' reprinted in (Surma, Srzednicki, Barnett and Rickey 1992). For a comprehensive account of the development and conceptual underpinnings of extensional mereology, as well as a detailed discussion of how Leśniewski's Mereology differs from Leonard and Goodman's Calculus of Individuals, see (Simons 1987).

[17] Rusell's paradox, first communicated in a letter to Frege in 1902, is the question of whether there can be a set of sets which are not members of themselves. See Leśniewski 'A Class of Classes not Subordinated to Themselves' in (Surma, Srzednicki, Barnett and Rickey 1992) for Leśniewski's early response.

[18] It is at least arguable that these formal requirements lead to a tension between our intuitive conception of the part-whole relation, and that expressed by mereology. See (Simons 1987).

[19] Van Inwagen states this explicitly (van Inwagen 1990) p. 30. Merricks does not explicitly commit himself to an extensional way of thinking about parthood, but his rejection of 'co-location' (see (Merricks 2001) Chapter 2, section III and the end of Chapter 3) is a rejection of the notion that two distinct entities could have the same parts.

[20] This is noted in (Simons 2006) p. 1.

objects with the same parts are identical; and conversely, that if two things have different parts then they are distinct.

Three inter-definable notions form the basis of formal mereological systems. These are the notions of 'part', 'overlapping' and 'disjointness'. We can follow (Simons 1987), in taking the following notation as saying x is a part of y[21]:

$$x < y$$

And the following as saying that x is a proper part of y (the difference being that things can be parts of themselves but cannot be proper parts of themselves):

$$x << y$$

We can then say that two things overlap if they have a part in common:

$$x \, o \, y \leftrightarrow \exists z \, (z < x \, \& \, z < y)$$

A thing is disjoint from another if they have no parts in common:

$$x \, l \, y \leftrightarrow \neg \, x \, o \, y$$

The fundamental notion, however, is that of a mereological 'sum' (or fusion). The intuitive idea of a mereological sum is of an individual which collects some group of individuals into a whole. To represent this notion formally, we would need to articulate a way of referring to multiple objects. Van Inwagen prefers the use of plural reference to do this. We will follow him and take 'the *x*s' to refer to some particular individuals. We can then define the notion of a fusion or sum in the same way as van Inwagen, as follows:

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[21] The rest of the notation here has been borrowed from Simons too.

'y is a sum of the *x*s = df

The *x*s are all parts of y and every part of y overlaps at least
one of the *x*s' (van Inwagen 1990) p. 29.

This is essentially the definition of the notion of a sum that Goodman gives in
his presentation of the Calculus of Individuals in his (Goodman 1951) (though
Goodman's presentation of it is somewhat more formal). Leśniewski, and
contemporary Universalists, take it to be the case that for any given collection of
objects there will be a sum or fusion of them.

This sort of formalisation of the part-whole relation forms an important part of
the background to Organicism. This can be seen, in particular, in the way that
van Inwagen introduces the notion of composition, as follows:

'We shall use the expression

The *x*s compose *y*

as an abbreviation for

the *x*s are all parts of *y* and no two of the *x*s overlap and
every part of *y* overlaps at least one of the *x*s.'
(van Inwagen 1990) p. 29[22].

Van Inwagen is explicit that the notion of overlapping that he is using is the
same as that introduced above: two things overlap when they have parts in
common. As he notes, this notion of composition is the notion of a
mereological sum with the addition of a requirement that none of the parts of y
overlap each other.

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[22] In (van Inwagen 1987) van Inwagen attributes this account of composition to Carnap,
though he does not give a reference.

We can see then that the notion of composition that forms the background to the Organicist position is very much influenced by formalised systems of mereology. Extensional ontologies such as Leonard and Goodman's Calculus of Individuals (Leonard and Goodman 1940) lend themselves to Universalism, because it seems that they allow us to treat any collection of individuals as composing another individual. However, if we have (as the Organicists think they have) a principled restriction of composition to some entities (so that only some things together compose another thing), then we could still take the rules of composition given by a fully developed extensional mereology to give an account of how parts and wholes are related to each other. It is just that there are fewer wholes then the Universalist acknowledges.

Organicists share some of the main assumptions of mereology (for instance that parthood is extensional and transitive see (van Inwagen 1990) pp. 54-55), but (unlike Leonard and Goodman) they restrict their consideration to 'physical' simples and also think that only some of those simples compose other things. Thus, what they are talking about when they discuss composition is how physical simples or atoms fit together to make bigger things. It will be argued below that this notion of a physical 'simple' is much more problematic than has been supposed.

That van Inwagen is thinking about composition in this way is further demonstrated by the sorts of principles that van Inwagen thinks we can give to say how parts and wholes are related. One of the ways he thinks that we find out about the properties of composite things is through 'principles of composition'. These are supposed to be 'self evident' ((van Inwagen 1990), p. 54) common sense principles that are independent of what account we give of what composites there are, or what 'composition' comes to. Thus, he suggests the following:

'If each of the xs has a surface and the xs compose y, then y has a surface and the surface area of y is less than or equal to the sum of the surface areas of the xs.

If each of the xs has a mass and the xs compose y, then y has a mass and the mass of y is the sum of the masses of the xs.

If each of the xs occupies a region of space and the xs compose y, then y occupies the sum of the regions occupied by the xs.'

(van Inwagen 1990) p. 44.

These principles make perfect sense if you are thinking of parts as physical atoms pushed together to make an object—but less sense under some alternative conceptions of parts (see Section 1.3 below).

The compositional ontologists with whom we are here concerned are thinking about composition as something that, if it happens, is done by bits of matter, as distinct from being done by 'sparse' properties, tropes, form and matter, or some combination of these with a bare particular. The bits of matter are related in a way which could be articulated in terms of a restriction to the physical of formal mereological systems such as that of Leśniewski[23], or the Calculus of Individuals of Leonard and Goodman. One interesting feature of Leonard and Goodman's Calculus of Individuals is that they are explicit that it could apply to any individuals whatsoever, including property instances, and in fact they think that is part of its utility. An 'individual' in Leonard and Goodman's system is just something of the 'lowest' logical type.

Organicists then, share with Universalists an understanding of what sort of relation composition is. In addition, they share a particular notion of the domain of things that they are dealing with— the domain of physical things.

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[23] See Leśniewski – 'On the Foundations of Mathematics' in (Surma, Srzednicki, Barnett and Rickey 1992),

In the next section a number of other notions of part will be distinguished. It will be noted that some of these sorts of conceptions of part could also be thought of as 'compositional' ontologies, but that these are not under discussion in this thesis.

1.3   Other notions of part and other sorts of 'compositional' ontology.

We can see that Organicists and Universalists share some background assumptions about composition and about what sorts of things are eligible to be parts. In this section we note that there are ways of thinking about parts other than that of the Organicists and Universalists. Some of these ways of thinking of parts could also be thought of as compositional ontologies, in the sense that they try and give an account of what there is by determining a basic sort of entity and then determining when these basic entities combine in order to compose other entities. None the less, these accounts are not the target of this thesis, and will here be set aside.

It should be clear that while philosophers such as Armstrong (see for instance the theory of universals presented in (Armstrong 1978b) and in a more accessible form in (Armstrong 1989)) and Bacon (see (Bacon 1995)) can be construed as treating everyday objects as being 'composed' of sparse properties[24], and Simons (e.g. (Simons 1998)) asserts that objects are composed of tropes. These philosophers are not compositional ontologists in the sense being targeted by this thesis.

One charge that could perhaps be levelled at Universalists is that they take there to be only one concept of 'part' and 'whole', where in fact what we are dealing

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[24] There are also examples in the history of philosophy of ontologies which could be construed as 'compositional' but in ways different to the extensional conception of the Organicists. Arlig (Arlig 2008), for instance offers a useful survey of the central place that the notion of division and various notions of part and whole had in medieval philosophy.

with is a cluster of related notions[25]. This would not in itself be much of an objection to any compositional ontology so long as the notion of part that that compositional ontology used could be shown to be coherent and applicable to those entities that they are concerned with (though Universalists, for instance, will be inclined to hold that their notion of parthood is superior to others)[26]. It will be useful in what follows, however, to be clear that there are a number of different ways of thinking about parts available; that the formal way of thinking about parts adopted by compositional ontologists is one amongst a range of different ways to think about them.

Below we will see a number of different notions of 'parthood'; some of these will be referred to later in the thesis. The point of mentioning them here is to establish some background for the next section where we examine the range of questions that can be asked about composition and about simples, and suggest that one of the issues with Organicism is the particular conception of composition that they have and the questions that they want to ask about it.

Spatial Parts

Since matter exists in space and time, things made of matter occupy some space-time region. This makes it tempting to think of the parts of a thing as those items of matter that exist in the same space-time region as it. One could then define a notion of composition in terms of spatial overlap (as distinct from the mereological notion of overlap discussed above). This will be particularly tempting for metaphysicians who wish to individuate objects according to their spatial location. One motivation for doing this is as a solution to the problem of difference. The problem of difference arises for sparse universals theorists, who are realist about physical properties and hold that each property is wholly wherever it is instantiated. The problem is how to differentiate between two

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[25] See (Fine 2008) for a pluralist theory of part.

[26] A similar point is made in (Simons 1987).

objects with exactly the same sparse properties; they have the same properties, and in each case the properties they have are wholly located in the object. Why are they not the same object? Clearly, if objects are individuated by their spatial location, that would distinguish them (though another way would be to posit a 'bare particular' to do this job[27]). For philosophers without this sort of theoretical commitment, however, spatial parts will seem unattractive.

One reason for thinking that we should not equate parts of something with the matter in the space-time region that they occupy is that one can imagine there being two different objects in one place at the same time. Leaving aside contentious examples such as lumps of marble and statues, cases like the following rather gruesome example suggest the possibility of co-location:

> Suppose that a person is shot with a gun. The bullet pierces his cotton jacket and then enters his body. As it enters it drags a piece of cloth with it. Later, an inexperienced surgeon removes the bullet but overlooks the piece of cloth. The wound is sown up and the piece of cloth remains in the body.

> It seems plausible that the cloth has not become part of the body, and that bodily fluids pass through the cloth and continue their functions within the body. We might suppose that the cloth occupies a region of space also occupied by (at least part of) the body, but is not itself a part of the body.

Van Inwagen also offers an argument for the possibility (though not the actuality) of some sort of non-controversial collocation (see (van Inwagen 1990). p. 50).

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[27] see Chapter Three below.

Arbitrary Parts

Take an object. You could (in theory, if not in practice) cut it up any way that you wanted. Any sort of arbitrary bit of it could be cut off; each of these bits could be considered a part of the object[28].

Functional Part

We can distinguish Arbitrary Parts from Functional Parts[29]. For many things, to be what they are requires that they have parts that fulfil certain functions. Paradigm cases of this are artefacts created for a specific purpose, such as cars and airplanes; one could cut these things up into arbitrary parts, but it is hard to deny that they are also made up of parts which, due to *their own* nature are essential to the functioning of the whole. Thus we find that engines do not function well without carburettors or pistons. We can term these parts of an object its 'functional parts'. Things other than artefacts have functional parts; all the people I have spoken to recently had bodies that would not function very well without various functional parts, such as intestines, lungs, hearts and livers.

More controversially, we might think of various kinds of organic and inorganic substance as requiring functional parts in order to be what they are. Water, to take a school science example, requires parts of both Hydrogen and Oxygen in order for it to have the physical properties that it does.

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[28] Krecz (Krecz 1986) argues for a distinction between what he terms 'pieces' and 'parts' which matches well with the distinction being drawn here between arbitrary parts and functional parts. Markosion (Markosian 1998a) distinguishes 'metaphysical' from 'conceptual' parts, where conceptual parts are roughly equivalent to what are here called 'arbitrary parts'. Metaphysical parts, in Markosian's terminology are objects in their own right (though he does not say much about what this comes to).

[29] We can also think of things having parts in order to be what they are, without those parts having the sort of functional status suggested here. See for instance Kit Fine (Fine 2003) fn17 p. 206, where he notes that a statue may have an 'arm' that the matter constituting it does not.

Physical Part

One might think that Organicists, focusing as they do on composition relations between physical individuals, are themselves delineating a particular kind of part relation. The relation between physical individuals and the things they compose. We can term this the notion of 'physical parts', despite the questions that will be raised in the next section about whether the 'individuals' that they start with are really suitable for the job. It should be noted however that the formalised notion of parthood found in the Calculus of Individuals forms the basis of the Organicists' approach to physical parts. As such we could view their approach (and in fact the approach of Universalists) as applying the Calculus of Individuals to a restricted domain consisting of just physical individuals (for Universalists) or just physical individuals that constitute organisms or are simples (in the case of the Organicist).

"Alphabetical" Parts

As was noted previously, there are other sorts of ontology that might be considered 'compositional'. Amongst these, we might find alternative conceptions of parthood. Certain trope theorists[30], for instance, think of objects as literally composed of their properties (the term 'Alphabetical Part' is taken from the title of (Bacon 1995)). Trope theorists argue for a brand of nominalism about properties; they are property realists, but reject the notion that there are such things as "universals" which objects with "the same" properties have in common. Rather, they believe that objects are composed of "tropes" or property instances that resemble each other precisely.

Clearly the sense in which the mass of an object (to pick a physical property fairly arbitrarily) could be considered a 'part' of that object is quite different from the way that an arbitrary section of a table, or the engine of a car are parts of their respective wholes. For one thing, it is not necessary to think of the

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[30] See for instance (Williams 1953), or more recently (Simons 1994).

property as only applying to one region of the object; properties such as mass and density can apply to the whole object where "whole" is thought of in conventional terms. For another, such 'self-evident' properties of proper parts as having a smaller surface area than the whole seem to have no relevance to this sort of part.

The idea of property-as-part derives from the way that properties are conceptualised by trope theorists. One can think of an object as a whole and then imagine separating out each of its individual properties. One starts with the whole object and from that separates out the ways that the object is; each way or property is a trope. Without these properties the object would not exist.

One could be a trope theorist and also a mereologist. The key claim of the trope theorist is that properties are real but not repeatable; it is only one sort of trope theory that conceives of properties as 'parts' of objects. On the other hand, the view of the universe as constructed from properties is in some ways an attractive one.

There are two ways that an ontologist could combine extensional mereology with a trope ontology. One way is simply to apply the Calculus of Individuals to property instances, taking property instances as individuals. This will of course mean that any arbitrary collection of property instances will compose an object, but some of these arbitrary collections will no doubt coincide with things that we do in fact think are objects. The other way would be to distinguish two senses of part: alphabetical parts that coordinate to produce physical individuals, and a physical parthood relation to say how individuals fit together to produce bigger wholes. This seems perfectly reasonable.

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The existence of different metaphysical notions of part does not entail the falseness of the Organicist position. But we should be aware that Organicists in

particular, and compositional ontologists generally, are bringing to the debate about ontology a specific conception of what parts are and can be and a specific conception of what sorts of entities are the right sort to be parts of things.

Even if one were inclined to take composition as fundamental in one's ontology, one might think that one would be better off taking Alphabetical Parts as one's basic starting point, rather than the seemingly arbitrary physical individuals that seem to be presupposed by the compositional ontologists that are here being criticised. Van Inwagen correctly concludes that a proper account of composition, where that is an account of physical parthood, will be very difficult to provide. One conclusion one could draw from this is that such would be the wrong sort of mereological sum to build your ontology from. One reason that Alphabetical Parts might be preferable to mereological parts is that there is a clear notion and a well established tradition of treating properties as basic constituents in metaphysical systems (see for instance Plato's *Republic*, Chapters 9 and 10 of (Russell 1912), (Bergman 1967), (Armstrong 1978b))

We have seen then that there are a variety of more or less intuitive notions that could be appealed to as notions of 'parthood', and we have seen that some of these can be built into metaphysical systems. There are two points.

The first point is that which entities you take the composition relation to apply to is not a theoretically neutral matter. It is very much a part of the notion of composition that is being adopted. Alphabetical parts are posited as the fundamental level of a systematic metaphysics, and it is at least arguable that they are best conceived of as parts of the things they instantiate. Spatial Parts are most likely to be posited in response to metaphysical problems such as those outlined above.

The second point is that while we clearly do have intuitive conceptions of parthood and composition, that to a large extent when we appeal to these in the context of metaphysical theories they become subject to the requirements of the

theory that we are working with. There is an important sense in which when we are dealing with composition in relation to metaphysics we are dealing with a technical notion and not necessarily with the naïve notion appealed to in everyday speech. This is particularly true in the case of the Organicists' notion of part, relying as it does on a background conception that is derived from a restriction of formal mereology. In what follows it will be argued that this leads to two related problems for the Organicist. It will be argued that the notion of composition that Organicists are playing with is insufficient to enable them to identify simples; that there is a problem for them in identifying what things are supposed to be the relata of the composition relation. Secondly, it is argued that the concept of part that they are using is so anaemic that they cannot appeal to it in resisting a claim that everyday objects are simple.

Considering the importance of the notion of 'composition' to compositional ontologists, it is not at all clear what 'composition' is to amount to for them. They seem to have something like the following in mind when they are writing: Mereological atoms, though defined in terms of parthood, are just bits of matter (presumably the smallest bits that we can find). If composition were to take place, then some collection of bits of matter would be aggregated in order to 'create' the composite object. The relations between parts and these composite objects would conform to extensional mereology. These features of the Organicists' position, however, are largely unargued for presuppositions.

1.4 Questions about composition

Van Inwagen distinguishes two questions that one might ask about composition (see (van Inwagen 1990) he articulates the 'Special Composition Question' in section 2, and the 'General Composition Question' in section 4). In this section the special and general questions will be unpacked and what they show about the presuppositions of the Organicist position will be uncovered. It will be argued that while the Special and General compositional questions are important, there are other interesting questions that one might ask about

composition and the fact that van Inwagen (and Merricks) do not ask them is revealing.

The General Compositional Question is fairly paradigmatic of a platonic question of the form 'what is X?'. In this case the question is, 'What *is* composition?' (see (van Inwagen 1990) p. 39). The answer that van Inwagen asks for is one that takes the form:

> The *x*s compose y iff …

Where 'the *x*s' is a plural referring expression, and … is an answer that does not itself contain any mereological terms.

The Special Compositional Question on the other hand, is the question, 'when does composition happen?'. In van Inwagen's formal presentation, the question is, when is it the case that:

> ∃y the *x*s compose y

With 'the *x*s' again being treated as a plural referring expression. An answer to the Special Compositional Question, it should be noted, would take the form of the sort of rule of composition that compositional ontologists need in order to fulfil their project. The three theses about composition mentioned above, with a proviso, would constitute answers to the Special Compositional Question.

The Special Compositional Question is cast by van Inwagen in explicitly ontological terms: composition occurs when *there is* something composed. It is this feature which enables him to put his proposed answer to the question to the ontological use that he would like to.

This gives rise to the proviso. Restricted Composition, Unrestricted Composition and No Composition have been introduced as theses about when

composition takes place. Restricted and Unrestricted composition, however give rise to answers to the Special Compositional Question only if it is legitimate to infer from them their ontological correlates. That is, only if unrestricted composition really does entail Universalism does it constitute an answer to the Special Compositional Question, because only then will it say when *there is* something composed of the things under discussion. Similarly, where the form of restricted composition gives rise to Organicism, it only constitutes an answer to the Special Compositional Question as posed by van Inwagen because it makes an ontological claim. As will be argued in Section 1.7 (below), the move from theses about composition to theses about existence is problematic.

It is tempting to treat the distinction between the Special and General compositional questions as issuing from a special case of the familiar distinction between a concept and its extension, with the Special Compositional Question asking for the extension of the concept, and the General Compositional Question asking for an account of its sense. This would not be a mistake, but van Inwagen takes a good deal of care over the formulation of the questions, and it is worth just noting a number of elements of van Inwagen's treatment.

Van Inwagen explicates the General Compositional Question in two ways which we may suppose are intended to be equivalent. On pages 38-39 of (van Inwagen 1990) he distinguishes the questions as follows:

> 'To say what composition *was* would be to say what multigrade relation was expressed by the sentence "the *x*s compose y", and an answer to the Special Composition Question tells us only what multigrade relation is expressed by the (singular) existential generalisation of this sentence'

Later on the same page, he introduces the General Compositional Question:

> 'As the Special Composition Question may be identified with the question Under what conditions does composition occur?

So the General Composition Question may be identified with
the question, What *is* composition?'

To answer the General Compositional Question then (according to van Inwagen, and it is after all his question), one would need to be able to say what multigrade relation composition is identical to, but fill it out in non-mereological terms. The answer that van Inwagen requires for the General Compositional Question then will take one of two forms. The informal form will be 'Composition is …'. The more formal form will take the form:

The xs compose y iff …

Where the right hand side of the bi-conditional must not contain any mereological expressions. The challenge then, appears to be similar to that posed by someone who responds to the claim that there are moral facts by asking for a naturalistically acceptable property that can be said to constitute those facts, and in fact van Inwagen's argument in response is similar in form to Moore's open question argument[31].

Towards the end of Section 4 of *Material Beings*, van Inwagen expresses his view that it is unlikely that an adequate answer to the General Compositional Question will be found (see p. 51). Van Inwagen first notes that given the expected logical form that responses to the Special and General compositional questions must take, there is no formal way of inferring an answer to the General Compositional Question from an answer to the Special Compositional Question taken by itself. He then notes that the only way that he could think of for answering the General Compositional Question would be to propose some function that could be applied to 'the xs' such that it related 'the xs' to the object 'y' being composed and satisfaction of that function was necessary and sufficient for those xs to compose the thing y in question. That is, as van

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Inwagen puts it, the answer would have to have the following logical form (van Inwagen 1990) p. 44:

The xs compose y iff y has f(the xs)

Van Inwagen says that he suspects that any attempt to provide an account of the necessary and sufficient conditions for composition, or to find a multigrade relation that can be identified with composition, will be subject to counterexamples. In effect, he thinks that for any function on y and 'the xs' that one could put forward, it will still be possible to find cases where you can plausibly claim that it is an open question whether 'the xs' compose y.

The history of other attempts at finding necessary and sufficient conditions for the application of concepts suggests that van Inwagen might be correct to be pessimistic. Van Inwagen, in fact concludes:

> 'I am inclined to think that there is no way of answering the General Composition Question. I am inclined to think that the concepts "part", "sum" and "compose" form what (by analogy to "the modal circle" or "the moral circle") one might call the "mereological circle", a closed family of concepts.'
> P.51

Given van Inwagen's pessimism about the prospects for answering the General Compositional Question, his pursuit of the Special Compositional Question might seem unsurprising. But one might wonder what would be wrong with at least sketching out how the mereological circle would look[32]. Why would this not be a worthwhile project to pursue, if composition is interesting at all? Why should we not just accept mereological terms as basic? If they are foundational

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[32] Katherine Hawley has argued that there could be answers to the General Compositional Question, and that these would take the form of 'principles of composition' analogous to principles of identity in that you would need different principles for different sorts of object. She notes that van Inwagen's requirements of an answer to the General Compositional Question are more stringent then his requirements of an answer to the Special Compositional Question, requiring the answer to be both non-trivial and also apparently a conceptual truth. See (Hawley 2006).

in ontology, it should not be surprising that they are resistant to analysis, but then why should we not think the mereological circle a virtuous one?

One thing to notice is that there are a lot of questions that one can ask about composition other than the Special and General compositional questions. Composition (at least when taken as a relation between physical individuals) appears *prima facie* to be a non-symmetric relation (or collection of relations) between one thing (the composite) and many things (the compositors[33] or parts) which compose it. In so far as the thing composed is a composite, it is ontologically dependent upon the composition relation.

There are then a number of different relations and sets of relations that we may be interested in when considering composition, and we may ask questions relating to any of them. Take first the relationship between an object and those parts that compose it.

Suppose an object O to be composed of n parts p_1, p_2,…p_n. Then one sort of relation that we might be interested in is that between each of the parts and the object. That is, we could be interested in the relation between p_1 and O by virtue of which p_1 is a part of O, the relation between p_2 and O by virtue of which p_2 is a part of O, and so on.

We might also be interested in the relationship that holds between p_1…p_n taken as a group and the object they compose. I.e. we might be interested in the relation between O and $\{p_1, p_2,…p_n\}$.

The other sort of relation one might be interested in is between the compositors. It is this latter sort of relation that an answer to the Special Compositional Question might hope to offer some insight into. That is, we

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[33] Use of the term 'compositor' here should be fairly self explanatory, but it is here used for things that are candidates for being parts.

might be interested in the relation between $p_1 \ldots p_n$, by virtue of which $p_1...p_n$ compose something. We might also be interested in the relationship between them such that the thing that they compose is O.

There are, then, a number of relations that should be examined if we are to investigate composition properly, and a number of compositional questions that might be asked.

Van Inwagen asks three compositional questions:

General Compositional Question: When is it the case that the xs compose a y

Special Compositional Question: When is it the case that there is something composed by *the x*s

An answer to the Special Compositional Question can also be understood as an existential generalisation of an answer to the General Compositional Question in that whenever it is the case that 'the xs compose a y' is true, it will also be the case that 'there is something composed by the xs'. Of course, in that situation there will also be something 'the xs' compose, so (as van Inwagen notes (van Inwagen 1990) p. 48) we can also ask the:

Inverse Special Compositional Question: When is it the case that there is a y that has the xs as parts

Given the discussion above, to these questions we may add the following more specific compositional questions:

- What relations (if any) must there be between compositors in order for them to compose something?

- What relation must there be between an individual compositor and an object in order for the compositor to be a part of that object?

- What relation must there be between a group of compositors and an object in order for them to (jointly) compose that object?

- What is the relation between the properties of compositors and the properties of the composite?

- What relation is there between the compositors and the composite's *being the thing that it is*?

Some of these questions might be answered by what van Inwagen terms 'principles of composition', but do not get further development than that (see Section 1.2 for discussion of the use van Inwagen makes of principles of composition).

Of course, that there are other questions to ask does not invalidate the Special Compositional Question. Nor does it tell against any particular answer to that question, certainly not the Organicist answer. The point is that once one has, as Organicists have, rejected Unrestricted Composition and No Composition, one is compelled to think of composition as a much more complicated phenomenon, as I will now explain.

The first four of these other questions emerge once one has rejected Unrestricted Composition and No Composition. If Restricted Composition is correct, then it is likely that composition is not a single relation; if it happens at all it is extremely complicated and involves a number of relations in different directions between different things. It is very likely not just a multigrade relation in the sense of being a relation which takes an indefinite number of individuals as arguments and applies equally to all of them. It is very likely also multifaceted; it is likely to be something which happens when a number of different relations are satisfied by a number of different relata, some of which will be composites and some compositors. Ideally, compositional ontologies would speak to these

complexities. Given that any account of composition would have to answer these questions, and in addition explain how the answers related to each other, it is not surprising that Organicists do not offer an account of composition. What is slightly surprising is the suggestion that the Special Compositional Question is answerable while the others are not. Taken independently of the answers proposed by Merricks and van Inwagen and the aspirations of compositional ontology to say what there is, there seems little reason to prefer the Special Compositional Question over others. Van Inwagen's choice of which question to answer is motivated by his metaphysical goals, rather than an interest in composition.

In fact, one might think that focusing on the Special Composition Question in this way is like trying to put a car in gear before depressing the clutch: one might think that the right way to find out about composition is to find out what things there are, and then try and find out which of those things are composite. What we have seen so far is that there are a number of different notions of parthood that we could discuss and a number of questions about composition that we could ask. Van Inwagen poses two very specific questions about composition, but, as we have seen, he does so having already made some non-trivial assumptions about what sorts of entities can be compositors and what the formal properties of the composition relation must be.

1.5 What we can learn from answers to questions about composition

We have seen then, that out of the available questions that van Inwagen could have asked about composition, the one that he decided to answer was the Special Compositional Question. Van Inwagen thinks that his answer to the Special Compositional Question provides the best account both of what there is and of objects. It is worth being clear then, just what sorts of things can be taken to follow from an answer to the Special Compositional Question, and from the Organicist answer to it in particular.

The answer to the Special Compositional Question that van Inwagen offers is as follows:

∃y the *x*s compose y iff the activities of the *x*s constitute a life.

What can we infer from this answer? In the last section we noted that van Inwagen argues that there is no good analysis of composition; that there is no satisfactory answer to the General Compositional Question. Van Inwagen claims that an answer to the Special Compositional Question does not help us with the General Compositional Question. What then can we infer from an answer to the Special Compositional Question?

One might think, for a start, that No Composition gives us a pretty good grip on what composite objects are: To wit, non-existent. Van Inwagen in fact allows (see (van Inwagen 1990) p. 73) that non-composition provides an answer to the General and the Special compositional questions, but holds that his own answer to the Special Compositional question and the Universalist answer fails to give similar insight into the nature of composite objects[34].

Arguably, however, a Universalist answer to the Special Compositional Question would tell us some things about composite objects. One might think that the objects that are generated by Leonard and Goodman's calculus of individuals are determined by the nature of the calculus; they are arbitrary collections, no more no less. It may be that some of these collections constitute those objects we find around us (tables and trees and such like), and the fact that the matter constituting my desk composes a mereological sum does not entail anything

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[34] In fact he argues that universalism does not even answer the Special Compositional Question because not all mereological sums are composite objects (see the discussion of van Inwagen's definition of composition on p. 25 above and also see (van Inwagen 1990) p. 79); only non-overlapping sums are. But since overlapping is a mereological term, this answer fails to satisfy his requirements for an answer to the General Compositional Question.

about my desk. But mereological sums, if they exist, are a type of object. They are a type of object which is a posit of a certain sort of metaphysical theory. The metaphysical theory determines, for instance what the persistence conditions of a mereological sum is: a mereological sum exist just as long as its parts do. Thus, while Universalism may not by itself tell us much about tables and chairs and such like[35] it does tell us about the objects to which it gives rise.

It seems then that if an answer to the Special Compositional Question is going to be powerful enough to play the basic role in a compositional ontology, then it is also going to tell us some things about the things that there are. Surely, one might think, at the very least it is going to have to give us some information about when those things survive or are destroyed, if only because when a composite object is destroyed composition will have failed.

We might be tempted to think that van Inwagen's answer does entail some things about the thing composed. One thing it might be thought to entail is that the thing composed is alive. Van Inwagen identifies the thing composed as an 'organism'. But it is important to note that while we do in fact have a prior conception of what would constitute something's being an organism, this is not what is being appealed to by van Inwagen. He introduces the notion of an organism as follows:

> 'Suppose that something is such that certain objects compose it in virtue of their activity's constituting a life. Let us call such a composite object an *organism*.' P.90

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[35] In fact, accepting Universalism does also put fairly heavy constraints on a theory of everyday objects, in particular it creates a challenge in accounting for continuity of everyday objects, and tends to lead one to a perdurantist theory of temporal continuity for objects such as that advanced in (Sider 2001). That is, one is led to hold that at any given time all that one is able to interact with is a 3 dimensional part of a 4 dimensional object.

At the start of the next paragraph he asks 'What is an organism like?'. The sources of data for his answer are principles of composition[36]: those things that we know (independently of either of the compositional questions) about how the parts of a composite object relate to the whole. (Van Inwagen gives examples of such principles on page 44 of (van Inwagen 1990), they include, for example, the principle that the surface area of a whole is less than or equal to the surface area of its parts).

The term 'organism' then, is functionally defined by van Inwagen. An organism is that thing *whatever it is* that is composed of the things that constitute a life. To find out the nature of such things you need to engage in further reasoning based on what you know about composition and about the parts of the thing composed.

So far little has been said about Trenton Merricks' contribution to the Organicist literature. This will be remedied (see particularly Chapter Six and Chapter Seven), but for now it is worth noting that he does not offer an analysis of composition either. He *is* explicit in taking composition to have ontological import. That is, he, like van Inwagen, takes the existence of composites to be necessary for there to be everyday objects, and the existence of macroscopic objects as sufficient for the existence of composite objects.

The case in favour of Organicism will be discussed at length in the final three chapters of this thesis, but it is worth noting in advance of this, that the reasons given by Merricks and van Inwagen for positing the existence of living things are not primarily reasons relating to composition. Van Inwagen in fact argues that answers to the Inverse and General Composition questions will not necessarily entail the best answer to the Special Compositional Question.

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[36] We met van Inwagen's proposed principles of composition above on p. 27.

Given this, we might wonder whether Organicists really need to develop their position in terms of composition at all. In the next section it will be argued that an explicit argument is required to get one from a thesis about composition to a thesis about the existence of everyday objects. The Organicist answer to the Special Compositional Question could just as well be tabled as an answer to an alternative question that makes no reference to composition at all. That is:

> When does the causal interaction of n pieces of our environment require us to posit a further n+1 entity.

The Organicist answer would, presumably, be as follows:

> The causal interaction of n pieces of our environment require us to posit a further n+1 entity iff the causal interactions constitute a life.

To be properly fair to van Inwagen, we might try putting the question in the same form as his 'official' version of the Special Compositional Question. When is it the case that:

> $\exists y$ y emerges from the causal interaction of the xs

And the Organicist answer:

> $\exists y$ y emerges from the causal interaction of the xs iff the causal interactions of the xs constitute a life

One could just as well conclude that the Organicists' positive ontological claim is true without ever discussing composition (and few would question it). One might think that the Organicists' positive ontological claims really have nothing very much to do with composition. Their arguments in favour of these claims would seem to bear this thought out. Two main lines of thought underlie them.

The first of these is the Cartesian notion that we, as thinkers, know that any ontology which excludes thinkers must be false[37]. Since we are both thinkers and composite objects, it follows that there are some composite objects. The second basis for inferring the existence of organisms stems from the claim that organisms such as ourselves have 'emergent' properties which cannot be attributed to the joint action of our parts in a way that is not the case for other macroscopic objects[38]. The second of these lines of thought does make reference to parts, but such reference could again be replaced by discussion of causal interactions.

The Organicists, however, introduce discussion of composition when discussing their more controversial negative ontological thesis: the thesis that there are no non-living macroscopic physical objects. They think that the reasons that Eliminativists have for rejecting the existence of everyday objects hold weight. The Eliminativist of course rejects everyday objects in part because of worries about composition.

On the face of it then, the Organicists' discussion of composition is primarily required to support their negative ontological thesis; otherwise there is no real need for them to discuss composition at all.

But having rejected No Composition, Organicists find themselves with argumentative burdens that the Eliminativist does not have. They must account for those cases where composition does happen. Organicists' failure to offer any analysis of composition (beyond that adopted from formal mereology and discussed above) puts them in an awkward rhetorical position. While Organicists are adopting a compositional approach to ontology, they have no real account to give of what composition 'itself' is. It is not, of course, unusual for us to find ourselves in the position of being able to determine the extension

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[37] See (van Inwagen 1990) Section 12.

[38] See (Merricks 2001) Chapter 3 and 4, and also see Chapter 6 in this thesis where the argument from overdetermination is discussed in some detail.

of a concept without being able to define it (like the judge who acknowledged his inability to properly define 'pornography' but alleged that he knew it when he saw it). In this case, however, the position is invidious. As will be argued below, it is invidious because the failure to give an account of the concept of composition leaves open the possibility of introducing other notions of composition than the extensional notion that forms the background to the Organicist position. This means that it is difficult to see what the content of a claim that people or everyday objects are mereologically simple is, and why we should reject it. The fact that Organicists claim composition happens but fail to give an account of it will, it will emerge, leave them with two problems. Firstly, it makes it difficult for them to offer a convincing account of what it would be for something to be 'simple'. Secondly, and leading on from that, it leaves them with a problem dealing with the challenge that everyday objects might best be considered as 'simples'. Or so I argue below.

1.6   Simples

We have seen how the notion of composition that Organicism rests upon relies on unargued presuppositions about what sort of relations are involved in composition, and we have seen how the Special Compositional Question seems most sensible in the context of a response to a Universalist and Eliminativist approach to metaphysics. However, I have suggested that having accepted Restricted Composition one is left having to make sense of composition in terms of a much more complicated group of relations than Organicists really acknowledge. What is more, I have argued that there are a wider range of questions to ask about them than is suggested by the Special, Inverse and General compositional questions. We have also noted that Organicism makes use of two notions of part. In the background is the notion of parthood that is formalised in Goodman and Leonard's Calculus of Individuals, which is then combined with or restricted to a notion of physical parthood.

In this section the notion of a mereological simple will be unpacked a little. This will be important in two respects. Firstly, in the next section it will be argued that the notion of composition presupposed by Organicists does not rule out the possibility that everyday objects are simples. Secondly, the O-arranging manoeuvre, which is discussed in detail in Chapter Four, makes extensive use of the notion of a mereological simple or atom. Essentially the idea of the O-arranging manoeuvre is to mitigate the seemingly self-evident falsity of the claim that there are no everyday objects, by replacing them with object-wise arrangements of simples. If the Organicist is unable to give an account of simples, however, then he will need to reformulate the O-arranging Manoeuvre.

In the context of an extensional mereology a simple is just supposed to be a thing without any proper parts. Working within the framework of Goodman and Leonard, for instance, a simple is just an individual that is disjoint from all other individuals. However, once we limit the range of possible individuals to physical objects (as Organicists do), we find ourselves dealing either with Democratian atoms or with the atoms of physics. Democratian atoms are what you are left with if you take a physical object and keep dividing until it is no longer possible to divide it anymore. Such things would presumably be very small, and presumably microscopic. The atoms of physics on the other hand are now well known to be composites, made up of electrons, neutrons and protons; and with the nucleus now being supposed to be made of even smaller particles, leptons, quarks and the like. One or other of these approaches seems to be what Organicists have in mind.

We can, however, raise an issue for Organicists about the very nature of the simples that they discuss. The issue is this. In the last three sections it has emerged that Organicists do not offer an account of what 'composition' is. We might ask then, on what basis they can say whether some thing or other is a simple. It is far from clear that they can just appeal to the notions of parthood inherent in extensional mereology. While extensional mereologies are able to define what would count as a mereological simple in terms of related concepts

such as 'disjointness', what things to actually count as such are argued to be (at least by Goodman and Leonard) primarily a methodological decision[39]. More problematic though is that Organicists disagree strongly with the extensional mereologists concerning what things are parts and what things are not. This leads one to suppose that whatever the mereologist means by 'part of' or 'disjoint from' (the two notions are inter-definable) that cannot be what the Organicist means by it.

This difficulty with saying what composition is would, for instance make it very difficult for the Organicist to make sense of a Democratian notion of simple. How are we to make sense of 'division'? We can make sense of their dividing up organic wholes—for they are supposed by the Organicist to be composite objects. But once we have chopped a bit off a living thing we may suppose there is a good chance that it will stop living. It will then, by the Organicists' ontological standards, have stopped existing. How are we to divide a thing that does not exist? To be sure, on their account we can divide up an object-wise arrangement of simples (e.g. a torso wise arrangement of simples), but properly conceived by the Organicists' lights this is just moving simples around—the notion of simples is prior.

On the face of it, this presents Organicists with a problem. Organicists deny that things have functional parts. You do not, according to van Inwagen, strictly speaking have a liver. Your parts are simples. But now we must ask, what are these? How on earth would we determine what the candidate things to be simples are[40]?

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[39] As presented in (Leonard and Goodman 1940) part of the utility of the Calculus of Individuals is that it applies whatever entities you take to be logically basic. Thus, the conclusion of the paper (p. 55) is: 'The dispute between nominalist and realist as to what actual entities are individuals and what are classes is recognized as devolving upon matters of interpretative convenience rather than upon metaphysical necessity'.

[40] The question of what simples are is also raised in (Markosian 1998b).

One way to step around this issue, would be to defer to modern physics. The strategy there would just be to define simples as those things, whatever they may be, which are the smallest physical units of matter. This is, in fact, very close to the approach that Merricks and van Inwagen do actually adopt.

Van Inwagen adopts a functionalist definition along these lines. The notion of a simple is first introduced by van Inwagen, as follows:

> 'A *simple* or mereological atom is an object without proper parts, and a *physical* simple is a simple that unlike mathematical objects or God or Cartesian egos, belongs to the subject matter of physics' *p. 72.*

Later, while responding to a question about the persistence of simples, he explicitly notes that the definition of simple is functional in nature (before arguing that he is not committed to the existence of simples in any case):

> 'The notion of a simple is a functional, not a structural or ontological notion. The term 'simple' was introduced into our discourse as a name for objects that play a certain role in the economy of the physical universe.' (van Inwagen 1990) p.158.

In fairness, the existence or not of simples is listed in chapter 5 of (van Inwagen 1990), as one of the things that van Inwagen will not presuppose (c.f. p. 52). On the other hand, in the preface, van Inwagen lists ten assumptions that he makes that leads him to the metaphysical position that he occupies. The fifth of these is that 'matter is ultimately particulate' (p.5). He writes:

> 'I assume that every material thing is composed of things that have no proper parts: "elementary particles", or "mereological atoms" or "metaphysical simples".' (van Inwagen 1990) p. 5.

Merricks similarly makes reference to physics, and claims that he does not really need atoms in his ontology:

> 'In much of what follows, I'll make claims about *atoms* arranged statuewise. I have in mind here the atoms of physics,

not Democritus. For there is no need to build a commitment to (or, for that matter, against) simples into Eliminativism….Then again, there is no need to build in a commitment to the atoms of physics either. So consider my claims about the atoms of physics to be useful but expendable. Such claims are really placeholders for claims about whatever microscopic entities are actually down there' ((Merricks 2001) p.3)

It is probably just as well that van Inwagen and Merricks think that they can get along without simples, because it is not clear that there is really any such thing, at least if by 'thing' one means individuatable persisting entities, as we shall now see.

In (Simons 1998)[41], Simons quotes Schrodinger:

> "…the elementary particle is not an individual; it cannot be identified, it lacks 'sameness'. The fact is known to every physicist… In technical language it is covered by saying the particles 'obey' new-fangled statistics, either Einstein-Bose or Fermi-Dirac statistics. The implication, far from obvious, is that the unsuspected epithet 'this' is not quite properly applicable to, say, an electron, except with caution, in a restricted sense and sometimes not at all" (Schrodinger 1950) p.109

If, at the most fundamental level, matter is not particulate but a sort of quantum froth[42], then talk of 'whatever microscopic entities are actually down there' somewhat misses the point. Van Inwagen, in an admirably straightforward way, acknowledges that he is unable to give any sort of criterion for the persistence of simples. He even gives an example:

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[41] See also (Lowe 1994), who references (van Fraasen 1991). A different reason for worrying about the existence (or at least the nature) of fundamental particles is provided by 'ontic structuralists' in the philosophy of physics, who claim that there are relations but not relata involved in fundamental physics (where the relata would be fundamental particles). See discussion in, (Chakravartty 2003), (French and Ladyman 2003), and (French 2006).

[42] This Phrase seems to be fairly common, see for instance the New Scientist: http://www.newscientist.com/channel/fundamentals/mg18925394.600-sights-set-on-quantum-froth.html, accessed March 2009.

> 'An electron disappears from a certain orbit and an electron appears in a lower orbit, the difference in energy being accounted for by the emission of a quantum of electromagnetic radiation. Is the "new" electron in the lower orbit the one that was in the higher orbit? Physics as far as I can tell, has nothing to say about this' ((van Inwagen 1990) pp.158-159)

Merricks and van Inwagen, however, seem unduly sanguine about the apparent difficulty of pinning down any particulars that could be identified as simples. They argue that their main claims about composition, though they would need reformulating if simples did not exist, do not require simples to exist in order to be true. Their main claim is that the only composite things are organisms, and they suggest that this claim could be true even without there being any simples. One is left a little puzzled by this suggestion however, for the following reason.

On the suggestion that there are physical simples we can develop an understanding of how an organism can be a composite object (on the Organicist account). Simples become involved in a homeostatic system, get together to take part in the activities of organs and such like and all together these activities constitute a life. Of course, for van Inwagen organs are not really objects—they are merely 'virtual' objects, but we can get the idea. The question is, if there are no simples, and the higher level composites within a body such as lungs, tongues and viscera are merely 'virtual' objects, what is it that organisms are supposed to be composed of?

Perhaps the idea is that there would exist some smallest non-frothy unit of matter, and this could take the place of simples as the basic ontological constituent. This may be physically possible (though the point that Schrodinger appears to have been making in the quote above is that even if this is the case, those non-frothy units of matter still fail to qualify as individuals). Assuming this to be the case, then the term 'simple' would be a placeholder for 'smallest non-frothy bit of matter'. We need not allow Organicists the assumption that such a thing makes sense, but allowing that it does, we might then ask the question, are

the smallest non-frothy bits of matter composite? Clearly they cannot be—as they are not living. But if they are simples, then they are a funny sort of simple that seems to ontologically rely on the activities of the subatomic 'froth', in a way similar to the way we might suppose a whole to rely on its parts. Once we have introduced this funny sort of entity into the mix, we have lost something of the conceptual purity to which compositional ontologies aspire. We have 'simples' and composites, but the simples are now a funny sort of entity that is not fundamental—and it seems arbitrary to say that these things exist but not the virtual objects (such as lamb's kidneys) that those of us who have not fallen for the Organicists' svengali charms think are probably made up out of them.

Whether or not it is correct to say that the Organicist thesis could be true without there being any simples, it still seems that a lack of simples will cause the account as a whole some problems. To see this, assume that Schrödinger is correct and that there are no actual individuals that could be identified as 'simples'. The Organicist is now in a position where he has no account of what composition is, no way of differentiating some thing as simple or not, and no individuals that he or she can point to (even metaphorically) and say 'those things are simples'. Given this, there seems no real reason to suppose that *anything* is composite in their sense. Those everyday objects which exist may as well be simple. The issue is not so much, 'are there simples?' as, 'what would it be for something to be simple on an Organicist account?', and, further, 'what would it take for something to fail to be simple?'.

It will be worth saying something in passing about the possibility of 'gunk'. The gunk hypothesis is that there are no simples, that matter is infinitely divisible; that it is gunk[43]. Since van Inwagen and Merricks argue that simples and living things exist and are all that exist, the truth of the gunk hypothesis would mean

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[43] (Zimmerman 1996) argues for a gunk theory (though his argument is premised on simples being points). (Sider 1993) has argued that since van Inwagen holds it to be a necessary truth that there are simples and gunk worlds are possible, that van Inwagen's position is false.

that their position is strictly speaking false. How problematic this would be for them is not altogether clear; could they, for instance, accept a gunk hypothesis yet keep their positive ontological claim that the only composite things there are, are organisms? The main problem with their doing so, will be answering the question 'What are composite objects composed of?'.

If the world is, as van Inwagen supposes, ultimately particulate, then this is an easy question to answer: composite objects are composed of simples. If the world is a gunk world, however, then there are no simples to do the composing. Those with a more generous account of composition will not face any analogous problem. A Universalist, for instance can make sense of any given object being infinitely divisible, but an Organicist cannot.

In fact, if the gunk hypothesis is true it is difficult to see how an Organicist can make sense of everyday objects being divisible at all. If they retain the view that the only composite objects are Organisms, they would have to hold that there are no other objects. This is because gunk that did not compose something could not exist; in order for there to be gunk there has to be something divisible, and for something to be divisible it has to have parts. If a thing has parts it is composite. Once we allow things made of gunk we have allowed things made of composite matter, and this would deprive Organicists of the compositional rational for their ontology. The only existing things then, would be living things. But as was noted earlier, organisms do not respond very well to splitting. Most of them would die if split into two equal parts. What then, could they be composed of?

Supposing once more that there are simples, Organicists might be in a better position to account for them if they had an account of what composition is. That is, if they had an answer to the General Compositional Question. A simple, remember, is just a thing without any parts. Parts are the things that are held together by the composition relation to compose a whole. If we had an account saying what it is for some thing to be a part of another, or saying what it is for

some things to compose another thing we might be able to supply a principled account of why some things do not have parts, or others do[44]. If, for instance, we could say what it is for something to be a part of something else, then we might be able to say when something had no parts. If we had an account of composition that meets van Inwagen's high standards, a function for instance that relates parts to wholes, then we might be able to say what things do not stand in those sorts of relata. However, van Inwagen suspects no such account is to be found, and Merricks does not even mention the possibility of one.

One might suggest that the notion of 'part' being appealed to by the Organicist is the everyday notion. The thought would go as follows: The mereological view of parts that lies behind the Organicist position is in fact just a formalisation of our normal, everyday intuitions about parts (with the odd change to make the formalism come out right). There is just one (apparently unanalysable) notion of part that the Universalist, the Eliminativist and the Organicist have in common. Where they differ, goes the thought, is not on *what composition is*, but on *when it happens.* Given this, the thought might go, we do have an intuitive notion of what a simple would be, based on our everyday notion of part.

This suggestion, however, is not quite sufficient to rescue the Organicist. Even assuming that the notion of part being appealed to is our ordinary everyday notion, what is at stake is when one thing is a part of another. A mereological simple has to be thought of in terms of its failing to itself have any parts. But all of the suggested theses about composition (Organicism, Unrestricted Composition, No Composition) suggest that our everyday beliefs about when composition takes place are radically mistaken. How then is an appeal to our everyday conception of part supposed to tell us what things are simples? It cannot, and neither can anything else in the Organicists' position.

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[44] A noteworthy attempt to give an account of when something is a simple can be found in (Markosian 1998b).

If Organicists had a robust notion of parthood, then they might be able to appeal to it in order to give an account of simples. If they could say what parthood is, that is, they might then be able to give a principled reason for saying that some bit of matter does or does not have any parts.

Assuming that Organicists take the smallest non-frothy bit of matter conception of what a simple is, we might still wonder why we should accept that conception of what a simple is. As was noted above, given their commitments and their inability to say what composition is, it seems strange to attribute to that sort of object the ontological work that the Organicists do. We may suggest instead that composition, taking physical objects as the individuals to be composed and do the composing (as distinct for instance, from taking properties as compositors), is not the soundest base for a philosophical ontology.

1.7 Could everyday objects be mereologically simple?

So far we have sought to put a little pressure on the notion of 'simple' as deployed by Organicists. In this section, we suggest that the Eliminativist is unable to give good reasons for rejecting the idea that everyday objects are simples, or rather, that the obvious reasons that they might be tempted to give are undercut by their own position. If, as the Organicist supposes, we are in a dialectical position so extreme that it might require us to give up the existence of such things as tables and mountains, we might be better off seeing what alternatives we can come by. One thing we might revisit is the notion of 'simple', and has already been noted, the Organicists, while having something in mind that they mean by the term 'simple' do not really have a principled reason to suppose that there are such things.

Two claims are made in this section. Firstly it is argued that being composite is not a necessary property for everyday objects. Secondly, it is argued that it is no more outlandish to suppose that everyday objects are *in fact* simple, then it is to suggest that *in fact* there are none. It will be suggested that this gives us reason to

suspect that whether or not there are everyday objects does not really boil down to the question, 'are there macroscopic composite objects'?

Merricks and van Inwagen both give the notion that everyday objects could be non-composite short shrift. Merricks for instance says the following:

> 'The claim that atoms arranged baseballwise fail to compose a baseball might be hard to swallow. But it goes down like draught Guinness compared to the claim that baseballs are simples.' (Merricks 2001) p. 63

Van Inwagen, too, takes a dim view of simple everyday objects, and at places seems to suppose that everyday objects must necessarily be composite material objects:

> 'There are certain properties that a thing would have to have to be properly called a "table" in anyone's understanding of the word, and nothing has all these properties. If anything did have them, it would be real, a true object, actually a *thing*, a substance, a unified whole, and something more than a collection of particles. But nothing does. If there were tables, they would be composite material objects, and every composite material object is real, a true object, actually a *thing*, a substance, a unified whole and something more than a collection of particles.' (van Inwagen 1990) pp.99-100

However, the Organicists' failure to give us an account of what composition is means that by their own lights they are not really in a position to deny that everyday objects are simples. If, of course, it were the case that everyday objects are necessarily composite material objects than that would give them a reason to reject the thesis that everyday objects are simples.

However, it is not the case that everyday objects are necessarily composite material objects. Consider the following two possibilities, though they may be physically impossible (and therefore under some assumptions about

metaphysical impossibility, metaphysically impossible) they don't seem in any way to contradict our normal conception of 'chair-ness':

Sci-Fi world

New technology has been used to manipulate gravity and other forces so as to be able to produce 'force fields'. (This is something of a staple in far-future science fiction writing). Someone decides to invent a chair using force fields. These prove astonishingly successful inventions (presumably because they can be turned off in order to be stored). Every house has a few. These chairs are used in just the same way that we use chairs. The difference is they are not composed of matter at all. What one is sitting upon is just cleverly arranged force fields.

Extended Simples World

Extended simples world is composed entirely of simples and organisms. There are (as the Organicists in our world suppose) no composite non-organic objects. However, simples in extended simples world have the useful property of being extendable. Rather than being microscopic particles, they can (through the application of heat) be stretched into extended areas of space and into useful shapes. Some of these simples are extended into chair-shapes. These chair-shaped simples are used in just the same way that we use chairs.

Force chairs in Sci-Fi World are not composed of anything—they are not even material objects. If you are disposed to think that they are still chairs then you should accept that being a composite object is not necessary for there being a chair.

Extended Simples World is, by stipulation, consistent with the Organicist thesis about composition. If you think it is comprehensible and that chair-shape objects in Extended Simples World are chairs, then you should conclude that being a composite object is not an essential part of being a chair .

It is, of course, quite a step from arguing that there are possible worlds where there are non-composite everyday objects, or possible objects that are non-composite, to arguing that there are in actuality non-composite everyday objects.

In the sequel it will be argued that objects are best conceived of as functionally defined entities. This need not entail that objects are 'simple'; but one way of developing the emerging account will be that objects are functionally defined simples. The point made in the preceding sections is that the Organicists' account of composition is not robust enough to rule out such a position. The claim below will be that whether or not there are such things as chairs or tables does not depend upon composition. Rather, the way to find out whether or not there are chairs or tables is to see whether our 'chair' concept or our 'table' concept is satisfied. To put the point simply; there are chairs if all the chair things get done.

The Organicists' claim that objects do not exist does not involve the simple disappearance of the matter that does what objects do. Merricks and van Inwagen's position is not self-evidently false because, while it is their view that objects do not exist, they also hold that the matter which most people think comprises objects still does all the things that people normally suppose objects to do. Thus, someone holding the position advocated in the next chapter and an Organicist can disagree about whether objects exist, but agree that object functions are, in fact, fulfilled.

1.8 From composition to ontology?

In this chapter Organicism has been treated as a form of compositional ontology: It has been treated as an ontological thesis that is premised on a thesis about composition. It has been argued that because of Organicism's failure to give an account of what composition is, it runs into problems when faced with the claim that everyday objects are not composite.

We might agree that where composition happens amongst material objects, there is an additional 'whole' created from 'parts', and that this 'whole' must exist for some relation to count as 'composition'. Granting this, we might still question the idea that questions about the existence of everyday objects depend in important ways on questions about the frequency and distribution of incidences of composition.

Van Inwagen, at one point, appears to offer us an argument taking us from the claim that there are no composite objects to the claim that there are no everyday objects. The argument runs as follows and can be termed 'the simple argument':

1. Anything that exists is either a simple or a living thing.
2. Chairs are non-living
3. Chairs are non-simple objects
4. Therefore chairs do not exist.

This argument is clearly valid, but even so it is a poor argument. To see why, consider an analogous argument for the conclusion that there are no chairs:

1. Anything that exists is non-coloured or a living thing
2. Chairs are non-living
3. Chairs are coloured
4. Therefore, chairs do not exist

Or, the following argument which is not formally analogous but makes the point clearly:

1. Anything that exists is non-coloured
2. All chairs are coloured
3. Therefore, chairs do not exist

The thesis that no everyday objects are coloured is a philosophically live thesis[45]. But even if we accepted it we would be unlikely to conclude on that basis that there are no chairs. Rather, we would conclude that chairs are not coloured. If we accept the arguments provided for the unlikely conclusion that chairs and such like are not composite objects, our conclusion should, similarly, be that chairs are non-composite. That being composite is not a necessary property of chairs is demonstrated by the scenarios presented in the previous section.

The simple argument is so simple, that one might wonder whether it is really van Inwagen's argument at all. He certainly writes as if it is. The argument is found in the text quoted above, but to repeat it:

> 'There are certain properties that a thing would have to have to be properly called a "table" in anyone's understanding of the word, and nothing has all these properties. If anything did have them, it would be real, a true object, actually a *thing*, a substance, a unified whole, and something more than a collection of particles. But nothing does. If there were tables, they would be composite material objects, and every composite material object is real, a true object, actually a *thing*, a substance, a unified whole and something more than a collection of particles.' (van Inwagen 1990) pp.99-100

This section of text occurs in the context of van Inwagen's rejection of a number of ways of characterising his view. He wants to be clear that he is not arguing that tables are 'unreal' or somehow second class citizens, he wants to say that there are no tables.

The simple argument is not van Inwagen's only reason for adopting his position but it does seem to be a presupposition of compositional ontologists that one can make an easy inference from non-composition to non-existence. If this simple inference is supposed to be along the lines of the simple argument then it is unsound.

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[45] See for instance (Jackson 1977), (Boghossian and Velleman 1989).

Organicists and other compositional ontologists think that given a full description of the distribution of properties across a world, determining what entities that world contains is a matter of determining what simples there are in that world and when they compose other things. Thus far, so good. The point being made here is as follows: this method does not enable one to determine whether or not there are everyday objects such as tables and mountains unless one assumes that such things must be composite. But in this chapter we have seen that there are different ways that we could think about composition, and we have seen that which things we take to be eligible for parthood is likely to depend on other metaphysical commitments. We have also seen that there is no obvious reason to suppose that macroscopic objects must be composite. The notion of composition that Organicists are using is not such that they have an obvious reason to offer for why we should not treat objects as *for their purposes* simple. If it makes no qualitative difference what composite objects there are and it is possible to coherently disagree about what things are composite to the extent that Universalists, Nihilists and Organicists do, then it is reasonable to suppose that what things are composite in the sense that they are picking out is slightly arbitrary.

We are supposed to think that the decision about what entities there are will come down to which ontology provides the best account of objects. But Nihilism and Organicism are, from the outset, insulated from accounting for our experience of everyday objects by the O-arranging manoeuvre. To see how odd the notion of composition being used by Organicists is, consider that even those composite objects they do suppose to exist do not have the parts that we would (pre-philosophically) take them to. They hold that I exist, for instance, but that I have no kidneys (merely kidney-wise arrangements of simples). What is more, according to their position, it is impossible for me to have a kidney; kidneys are not (of themselves) organisms or (on the Organicists' view) simples.

My claim then is that for all Organicists have to say about composition, we could consider everyday objects to be simple. In itself the claim that everyday objects are simple is not very attractive; this is because it seems clear that they do have parts. But, whatever notion of 'part' we apply to objects to conclude that they have parts is not the notion of part that Organicists have in mind, for normally we suppose everyday objects to have more parts than just their fundamental atoms and Organicists do not. Similarly, we might worry that on the account offered everyday objects could not be cut in half. But that does not follow. A chair could be cut in half. It would be destroyed and two new objects created (or perhaps merely de-concatenated). What must be denied (if taking this line) is that the two new objects were ever themselves parts of the original chair. In fact, this is not a new position. In *Metaphysics* Z, Aristotle argues that no substance can have other actual substances as parts; his reasoning being that when things are parts of a substance they are only potential substances and not actual substances (Aristotle, *Metaphysics* Z13, 1039a in (Aristotle 1984)).

Someone might object to the notion that everyday objects are simple by pointing out that this seems to commit us to claiming that, for instance, there are cars but that no car has an engine (or people none of whom have kidneys). Strictly speaking though, all the position requires is that the engines that are located within cars are not thereby 'parts' of the cars, in the controversial sense of the word 'part' that has become the focus of recent metaphysical debate. We can still say that there are engines (though these must in themselves be simples), and we need not deny any other relationship that an engine has with its car. Thus, we need not deny the role of the engine in moving the car around or its location within the body of the car.

In any case I am not here arguing that everyday objects actually are simple. Rather, the point is that there is a lacuna in the Organicist position. All they have to say about composition is that it obeys certain formal rules, and that the only composite objects are organisms. But if this is all that you have to say about what composition is, then there seems to be no good reason to think that

everyday objects must be composite. It is preferable to suppose that objects exist but (in this weak sense of simple) are simple, rather than to suppose that there are no everyday objects.

The aim of this section has not been to address the main arguments for Organicism, merely to introduce the position and show that construed as a compositional ontology (as its protagonists do so construe it) Organicism faces a number of challenges that are not normally acknowledged. The positive case in favour of Organicism will be addressed in the last three chapters of the thesis. The next chapter sketches an approach to everyday objects that does not take what there is to be a matter of when composition occurs.

Chapter Two: Arrangements of simples and the bundle theory of everyday objects

A glossary of terms introduced in Chapter 2

Arrangement: a collection of 'simples'

Form: a collection of properties, initially, a collection of 'macroscopic' properties

Arrangement formation: the simples in an arrangement and the relations between them.

Arrangement structure: the relations between simples in an arrangement

Efficacious sub-structure of an arrangement: the subset of relations involved in an arrangement structure that are causally responsible for the arrangement form.

Arrangement-form: the collection of macroscopic properties generated by an arrangement formation.

Object-form: the collection of properties possessed by an object (assuming that there are such things).

Formal-role: pattern of possible causal interactions involving a form.

Object concepts: concepts that regiment the regularities in the world around us into objects.

Applications conditions: conditions under which it is correct to apply an object concept (that is, the conditions where, excluding error about what conditions are actually instantiated, it is true to say that there is an object of the that type there).

Co-application conditions: conditions under which it is correct to re-apply an object concept (that is, the conditions where, excluding error about what conditions are actually instantiated, it is true to say that something is the same object (as some other object)).

<p style="text-align:center">∗   ∗   ∗</p>

In the last chapter we saw that the notion of composition appealed to by Organicists is not as secure as might have been thought and that consequently there are difficulties for Organicists with articulating what it would be for something to be a mereological simple and with resisting the claim that everyday objects are simple.

In this chapter we develop the basis of what might be termed a functional-bundle account of everyday objects. It will be argued here that there are reasons why such an account is attractive independently of the case being built here against Organicism. We will soon see though, that the functional-bundle approach adopted here is very different to that of the compositional ontologists in the way that it approaches issues of metaphysics.

The theory of objects sketched in this chapter is based on the idea that there are regularities in our environment which satisfy our object concepts. The challenge to Organicists is to say what is needed in order for there to be objects beyond the satisfaction of our object concepts by regularities in our environment. The theory takes seriously the notion of an arrangement of simples which underlies the Organicists' O-arranging manoeuvre (which is discussed in Chapter Four). What Organicists do not really discuss in connection with the O-arranging manoeuvre, is the role that the arrangement of simples plays in generating the properties that the O-arranging manoeuvre is invoked to explain. The theory presented in this chapter takes seriously the notion that the properties of objects arise from the relations that hold between collections of simples in our

environment. It is argued that objects are complexes of properties that satisfy our object concepts and further, that particular complexes of properties can be identified with the properties generated by particular arrangements of simples.

I will argue that what differentiates random collections of properties from those that constitute objects is their suitability to satisfy our object concepts. It might initially seem as though there is something slightly miraculous about this, but one needs to remember that our object concepts were not developed in a vacuum. They were developed as a response to the world in which we find ourselves and to the important causal interactions that enable us to get around in that world. The idea is that our object concepts are suited to identify objects in our environment because that is their purpose, and that objects in our environment are such as to be so identified because our object concepts were developed in response to them.

The chapter has three main parts. The first of these introduces a good deal of terminology, which is used to describe the way that objects, simples and the organisation of simples are related to each other. In the second section the notion of an object concept is introduced and explored. In the final section of the chapter the theory of objects is stated, a potential objection is addressed and some general features of the account are discussed. In particular, the account is fitted into a wider story about how we are able to be effective in the world and it is shown to be based upon a plausible intuition concerning what needs to be the case for objects to exist. The chapter concludes with a brief discussion of the consequences of this intuition for the methodology we should adopt when establishing what things exist.

In the next chapter we will see that the account of objects developed in this chapter fits comfortably with the British empiricist tradition.

2.1 Everyday objects

The term 'everyday object' is used here to pick out the mundane things that surround us in everyday life. Examples would be tables, chairs, mountains, trees, roads, beaches, planets and the like.

Assuming, just for a moment, that there are such things, our primary interactions with them are causal. We ourselves are embodied creatures in the world, and in order to survive in that world we need to interact with it. What is more, our survival as a species has hinged largely on our ability to purposefully affect and manipulate the environment around us. Living things, we may suppose, tend to survive better, the better they are at recognising the salient parts of their environment.

We do, as a matter of fact, tend to recognise objects in the world around us. Looking around me as I write I find, amongst other things, a blue cup, an aspidistra and a lamp. Let us take the cup as an example. The properties of the cup that we experience tend to coordinate in a fairly predictable way. The cup tends to keep its shape as we move it around; despite variances in the surface shades we actually experience, we tend to think that the colour of the cup remains constant; in the normal course of things its mass does not change appreciably. What is more, I am in a position to make a number of counterfactual predictions concerning the cup. I can predict (amongst other things) that it will be an adequate receptacle for hot and cold drinks; that it will break if I drop it onto a hard surface; and that, *ceteris paribus*, it will fall if I drop it. Because I am in the position to make these sorts of predictions about the cup and many other the things in my environment, I am in a position to find the cup useful. Yet even if I did not find the cup useful, it would still have a place in my mental economy.

More fundamentally, all my experiences of the cup are derived from causal interactions with it: I can see it because of the light reflected from its surfaces,

to find out its hardness I must touch it (or communicate with someone or something that has), and by flicking it I can find out about its tonal properties when struck in a certain way (which may be understood in terms of the way that it transmits energy as sound waves).

The cup then, can be thought of as a collection or bundle of coordinated properties. It is because we are able to understand the way that the properties work together and coordinate that we are able to use the cup as a cup.

Our interactions with everyday objects then, depend on the regularities amongst properties that we find in our environment. Even those who claim that everyday objects do not exist will accept that there are some simples arranged in a way that is causally responsible for the properties that I associate with the cup. These properties are what below will be termed a 'form'. It will be argued in what follows that, with some qualifications, the existence of object forms is sufficient for the existence of objects.

2.1.1 Some preliminaries

In order to show how functional-bundlism about everyday objects is supposed to work, some preliminary terminology will be introduced (this is summarised in the glossary at the start of this chapter). The point of this is largely to fill in the way that the arrangement of matter is relevant to claims about the existence of everyday objects. In what follows there will be discussion of simples, but this is in no way essential. What is important in what follows is that the matter that constitutes objects in our immediate environment is structured, rather than unstructured. These structures could just as well be thought of in terms of relations between distributions of properties as in terms of relations between individual particulars. Discussion of the structure of 'object-wise arrangements', or objects for that matter, is notably absent from the Organicist and compositional ontologist literature.

The idea of the O-arranging manoeuvre, which will be discussed in detail in Chapter Four, is that all of the things which we normally think are true of objects can be accounted for in terms of cooperating collections of simples. Much of the Eliminativist case depends on our being able to make sense of activities of simples without there being anything which those simples compose. It is because we can attribute the macroscopic properties of objects to the action of cooperative collections of simples that we are supposed to be able to eliminate everyday objects from our ontology. In what follows we will allow that the idea of simples can be made sense of, despite the misgivings expressed earlier (doing so will, later on, enable us to engage with Organicists over issues that we otherwise could not).

Supposing that some object in fact exists because there is some matter arranged in a certain way (i.e. that we are not talking about force-chairs or some such object), we can call the particular matter that constitutes or realises the object, arranged as it in fact is, an 'object arrangement'. An object arrangement in this sense will be equivalent to an object-wise arrangement of simples, and we can allow that we can discuss the arrangement of matter without positing some object that is constituted or composed by that arrangement.

It will be easiest to introduce the terminology of this section by means of an example. Let us take as our example the chair upon which the auto-icon of Jeremy Bentham sits in the South Cloister at University College London.

Eliminativists hold that there is no such chair. Rather, they say, the auto-icon is supported by a chair-wise arrangement of simples[46], which, though not composing anything, do cooperate in order to support the auto-icon's weight.

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[46] Strictly, they would say that the auto-icon wise arrangement of simples is supported by the chair-wise arrangement of simples.

We can then talk of the chair-wise arrangement. Though, as will be emphasised when we discuss the O-arranging manoeuvre in Chapter Four, we cannot without argument hypostatize arrangements: an 'arrangement' for Eliminativists is not an object. In any case, there are a number of things that we can say about Jeremy's chair that do not beg the question against the Eliminativist.

One thing that we can note is that the chair has a number of properties that could be termed 'macroscopic'. That is, it is about 3 feet tall at the back, 2 feet tall at the seat. It weighs a certain amount at sea level and so on. These properties are explained by Eliminativists by reference to the cooperation of simples, but the properties themselves are not questioned. These macroscopic properties taken together constitute what will here be termed the 'form' of the chair. The notion of a 'form' is discussed in more detail in sections 2.1.2 and 2.1.3 below. Eliminativists will of course deny that there is a chair for there to be a form of, but they will, presumably, accept that the macroscopic properties that we would (on the hypothesis that there are chairs) associate with the chair are in fact manifest.

Some simples are, or so we shall assume for the moment, responsible for the macroscopic properties of the chair[47]. This matter is organised in a certain way: the simples are related in the ways required to causally produce the form of the chair. These simples, and the relations that hold between them, we may term the arrangement formation. There is no need to assume that the arrangement formation itself is an object; we can treat the term 'arrangement formation' as a multiple referring term.

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[47] An advantage for the position being developed is that it allows that just which simples are responsible for some object's form could be entirely vague, while also allowing that the form in fact exists could be entirely non-vague see Chapter 7 (p. 214) for a brief discussion of how someone holding this position might respond to the Sorites paradox.

Having noted that the arrangement formation involves both simples and their relations, we might also seek to pick out just the relations that hold between the simples which cooperate to produce the form of the object. This seems especially worthwhile given the difficulties in individuating simples alluded to at the end of Chapter One. We can coin the term 'arrangement structure' to pick out just these relations. The idea of an arrangement structure can be traced by loose analogy to structuralism with regards to physics (see for instance (Chakravartty 2003), (French 2006)), which is a thesis about fundamental particles in physics. Structuralism in physics comes in two forms, epistemic and ontological. The epistemic form says that we can never know about fundamental particles, but only about the relations between them. The ontological form denies the existence of such particles, positing just the relations instead.

We can, given the assumption that simples exist, explicate the way that an arrangement formation and an arrangement structure are related in terms of the Ramsey sentence gained by replacing all references to simples with variables[48].

Suppose that at a given time, t1, some simples s_1 to s_n (we may assume n is very large number) are arranged in a certain manner, and related in such a way that they jointly give rise to the form of a chair. That is, they jointly give rise to all the macroscopic properties of a chair. We may say that there is a chairwise arrangement of simples at t1. So far we have begged no questions of the Organicist: We have not claimed that there is a chair or that the simples compose something, we are merely using the term 'arrangement' to pick out some simples exhibiting certain relations.

If we consider all of the relations that the simples stand in, in relation to each other we will find that there are a very large number of relations. Each simple

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[48] The method for doing this is taken from (Lewis 1972). By specifying structures in this way we can dodge questions about what 'simples' are, by simply defining them as whatever give rise to structures.

will stand in some relation to each other simple, and there will be multiple place relations exemplified as well.

Let us take the class of m relations (which we will notate R_m) that hold between s_1 to s_n, and notate the claim that they all hold as $R_m s_1 \text{-} s_n$. It should be fairly easy to imagine replacing the singular terms denoting simples, which we have been pretending are individuals, with variables in order to produce what is effectively an open sentence $R_m x_1 \text{-} x_n$, and we can of course introduce existential quantifiers to bind each of the variables (which we will notate as $\exists x_1 \text{-} x_n$).

We can take $\exists x_1 \text{-} x_n \, R_m x_1 \text{-} x_n$ as describing the arrangement structure, and $R_m s_1 \text{-} s_n$ can be understood as describing the arrangement formation.

Here then, are the three technical terms that have been introduced so far:

'arrangement formation' (or 'formation'): the physical distribution of simples and relations (including bonds and such like) that hold between the simples in an object arrangement. In particular, in so far as they are described without reference to any particular sortal concept.

'arrangement-structure' (or just 'structure'): the relations in a formation independently of the simples that are involved in the object-wise arrangement that gives rise to the formation.

'object-form': the physical properties associated with an object at all the times that it exists. Or, so as not to beg the question against Eliminativists, the macro-level properties jointly caused by a succession of collections of simples arranged in some object-wise manner.

2.1.2 Multiple realisability of forms

The form of an arrangement depends more on the arrangement structure than on the arrangement formation: there is nothing that depends on *those particular* simples that are involved in the formation being involved in the formation. They could just as well be replaced by qualitatively similar simples. To see this, consider that a sufficiently qualitatively similar simple 'a' replacing one of s_1 to s_n will be able to contribute everything that the original simple did to the structure. This is just as well, since, as was noted in the previous chapter, the status of simples as 'individuals' is in any case far from certain. The place of simples could just as well be taken by distributions of properties (realistically conceived) or distributions of energy.

More importantly from the perspective of this thesis, nothing precludes the possibility that a number of different structures would be quite capable of giving rise to the same form. A slightly different set of relations; maybe a set of relations involving n-1 simples, could just as easily give rise to the form in question.

To see that different structures could realise the same forms one needs only to remember that the sort of formal account of a formation structure in terms of quantification over its Ramsey sentence is something of an idealisation. To see this, one need only consider what is involved in saying which simples are involved in the formation from which the description of the structure was derived (we will, for the moment, retain the convenient idea that simples are individuatable). If the formation can be expressed in terms of the multiple relations involved in R_m and the simples s_1-s_n that they relate, then, one might think that one should be able to also pick out the simples. That is, there should be a set S { $s_1, s_2, \dots s_n$ }.

The problem with this is that we cannot suppose that any particular object in our environment is straightforwardly constituted by any particular set of

simples; as the problem of the many shows us (see the Introduction of this thesis, p. 9), any of a large number of competing sets of simples may be considered to constitute an object. In the present context we are not presupposing the existence of objects, but the problem presents itself in a similar way; there is no particular set of simples that may straightforwardly be said to give rise to a particular form.

We are in a position to say, however, that the same form can be generated by a number of different arrangement structures. While the problem of the many poses a problem for objects if we think of composition as the major issue, it is not at all clear that we need be so concerned about the problem of the many with respect to forms.

To see this, we might consider as an example two arrangement structures that differ from each other only minutely, say in terms of the involvement of a single simple. Thus we might have the arrangement formation A, which we can describe as $R_m s_1 \ldots s_n$ and compare it to arrangement formation B, which can be described as $R_q s_1 \ldots s_{n-1}$. Formation A, then, is constituted by the simples s_1 to s_n and the relations that hold between them. Formation B, on the other hand is constituted by one less simple. It is fairly natural to suppose that the arrangement structures in A and B will also be different. The arrangement structure is comprised of the (possibly many) relations that hold between the constituent simples. If the number of constituent simples is different, then it seems natural to suppose that the instantiated relations will be different too.

Let us suppose that the arrangement formation A produces a form F of (let us say) a cup. It was noted above that we could in principle exchange the particulars that constitute the formation with qualitatively similar particulars without affecting the Form of the formation. It should be fairly evident that the form F would, for the purposes of a person's everyday interactions with it, be effectively unchanged if a single atom was removed. (We can make this

assumption for most cases—we need not assume that it is never the case the removal of one atom will affect the form).

We should conclude then that the *form* could be realised by either A or B. That is, the macroscopic properties of the formation could be given rise to by any one of a number of overlapping structures. The key to this is the phrase 'for everyday purposes'.

2.1.3 Forms: Object-forms and arrangement-forms

The notion of a 'form' was introduced above. Forms were introduced as collections of physical properties, and some examples were given. In this subsection the idea will be filled out in more detail.

We can discuss forms in several distinct, but related contexts:

- 'Object-forms': We can discuss the form of some everyday object or other. This is a fairly coherent way of going on: it is to talk of the macroscopic properties of the object in just the sort of ways that we normally do. So we can talk of the mass, hardness and dimensions of a pebble. In itself it does seem to presuppose the existence of objects. To the extent, however, that we should take seriously Organicists' claims to be able to account for the way the world appears to us in terms of the actions of object-wise arrangements of simples, we should be able to take our experience of object forms as non-controversial. In holding some form to be an object-form, we are saying that the properties involved in it coordinate in the ways we would expect the properties of objects (or object-wise arrangements) to coordinate.
- 'Arrangement-forms': We can discuss the forms that are the causal effects of particular arrangement formations.
- 'Forms-simpliciter': we cannot just assume that all properties are associated with objects (especially given the topic of this thesis) or that it

should be obvious how they hold together. If forms are just collections of properties, then we will need to frame a distinction between more or less arbitrary collections and collections that demonstrate the sort of coordination we associate with objects. We shall take the term 'form-simpliciter' to pick out just a collection of macroscopic properties taken independently of any coordination that they may display. Object-forms and arrangement-forms will also be forms simpliciter, though not all forms simpliciter need be object-forms or arrangement-forms (and indeed most of them will not be).

The suggestion being made here is that objects are constituted by object forms. What we interact with and think of as objects are collections of properties. Object forms are fairly easy to pick out: whenever we encounter something that we would normally take to be an object, we can count the combination of properties which we associate with that object as a form. In most cases, when we do encounter something that we would take to be an object, this is also an encounter with an arrangement formation that gives rise to a coordinated bundle of properties, and hence an arrangement-form. As was noted above, it is these bundles of properties that we engage with in our environment.

The question arises, what relationship is there between object-forms and arrangement-forms? It was argued above that object-forms are multiply realisable in that the same set of properties could be generated by a number of different arrangement structures. None the less, when we encounter an object-form there is (in all actual cases) some specific arrangement of simples responsible for its causal properties. We can suggest then, that in the case of particular object forms that we encounter it is legitimate to identify the actual object-form with the actual arrangement-form that is causally responsible for it. Clearly, if the multiple-realisability claim above is right then we have to allow that a form exactly like that in front of us could have been generated by a different arrangement off simples. However, in picking out the arrangement-

form we are not making reference to the simples[49]; we are making reference to the properties that they give rise to. It is therefore reasonable to identify an object form at a time with the form generated by a (possibly vaguely specified) particular arrangement structure and the simples that it relates at that time. In this sense then, we can identify object forms at a time with arrangement-forms at a time.

Arrangement forms were originally introduced in terms of the macroscopic properties generated by a particular arrangement formation. The term 'macroscopic' expresses an anthropocentric distinction—the distinction between being visible with the naked eye that we actually happen to have evolved rather than being too small to be seen with that eye. In fact there is nothing problematic in positing microscopic forms too, we might term them 'micro-forms' to distinguish them. So construed, the difference between forms and micro-forms is just that micro-forms are too small for us to be aware of individual instances of them. It is only because of the invention of the microscope and the development of atomic theory that we think about them at all. It is plausible to suppose that it is a subset of micro-forms that Organicists are picking out with their use of the word 'simple'. That is, they are picking out, more or less, those forms described by atomic theory. We could dub these atomic-microforms[50].

The distinction between macroscopic and microscopic properties involved in forms is not, however, entirely innocent. It was noted earlier that the very same

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[49] Unless the right way to understand simples is simply as distributions of properties.

[50] Merricks at one point ((Merricks 2001) p. 116) appears to entertain the thought that it would be okay to have a different account of composition at the micro to the macro level (specifically, that it is okay for microscopica to be overdetemined but not for macroscopica). This, however, seems very difficult to take seriously unless one has a less anthropocentric way of distinguishing between the two levels or a rationale for distinguishing 'composition' at these two levels.

form may be generated by different structures. These structures though may not be clearly discrete; they can (and usually do) overlap. We might think that at some level even microscopic changes in an arrangement structure, the loss of an atom say, or of a few atoms, must have an effect of some kind on the properties that arrangement structure produces. The fact that these changes are not appreciable at the macroscopic level might be thought to be irrelevant to whether they take place.

Relatedly, we might note that not all of the relations captured in a structure will be equally relevant to the generation of a form. Some relations will be causally significant, others may not be. Thus, in the case of Pebble, it seems plausible that the physical relations and chemical bonds between the simples making up the pebble are more relevant than, say, the ratio of the number of atoms on the right hand side of pebble to the number of atoms on the left hand side. We might then, distinguish the causally effective relations in a structure from the collection of relations that make up the structure as a whole. We can term that subset of the relations involved in a structure that are causally effective in producing the form associated with an arrangement formation the 'efficacious sub-structure' in relation to that arrangement form. This might be contrasted with those relations that are part of the structure that are not relevant to the causal production of the form, we might call these the 'non-efficacious substructure' in relation to the arrangement form. Clearly, changes in the efficacious sub-structure of an arrangement formation and amongst the items that it relates, will produce more changes in the form that the structure causes then will changes in the non-efficacious substructure.

One might think there is a potential problem for this sort of picture derived from the possibility of microscopic changes in arrangement formations. We can envisage microscopic changes in an arrangement formation having an effect for the properties that the simples in the formation cooperate to produce without those changes being appreciable at the macroscopic level. Thus, changes in the microstructure of the cup mentioned earlier might be such as to make the cup

more fragile than it was previously, without this fragility being appreciable in terms of our everyday interactions with the cup.

The challenge this presents to the view of objects to be presented here is two fold. Firstly, it seems that in our normal dealings with everyday objects we attribute to them both macroscopic and microscopic properties—to identify an object in terms of its macroscopic properties (that is, in terms of the object form) is all very well, but how do we then include its microscopic properties in the picture?

Secondly, if we allow that there could be microscopic changes to an arrangement-form, this raises the question of the relationship between arrangement-forms and object-forms. Arrangement forms were defined in terms of the properties generated by an arrangement formation. Object-forms are the properties that we in fact associate with individual objects. Now we might note that in most cases the properties that we associate with everyday objects are actually generated by the structures within an arrangement formation. Identifying object-forms and arrangement-forms, however, will be problematic if changes in the latter are not also changes in the former.

It was suggested above that the object form and the arrangement form is identical at a time. We might further suppose that the microscopic properties that are implicated in the production of the arrangement form, should be counted as part of that form in so far as they are properties associated with that arrangement. This would lead one to the conclusion that the microscopic properties that are implicated in the arrangement form should also be included in the object form.

On such a model the macroscopic properties produced by an arrangement formation that we encounter are the equivalent of the visible tip of an ice berg, where the remainder of the berg remains submerged. The arrangement form on such a view would include the microscopic properties as well as the

macroscopic properties that we initially associated with it. On the view canvassed in the previous paragraph these 'submerged' properties would also be involved in any object form that the arrangement gives rise to.

To say that object-forms constitute objects, and to note that instances of object-forms are often the same as instances of arrangement-forms does not necessarily tell us very much about objects. In particular it leaves the question of how to determine which forms-simpliciter are object-forms untouched. It will be argued here that what distinguishes object-forms is that they are suitable to satisfy our object concepts. In order to argue for this, however, we will need to clarify just what we are talking about when we use the term 'object concept'. That is the subject of the next section.

2.2   Object concepts

We are beings who inhabit an environment in which there are many material regularities. That is, there are arrangements of matter in our environment which behave in fairly regular and predictable ways. These regularities in our environment are a consequence of arrangement structures in our environment which are, themselves, populated with bits of matter.

Let us consider a pebble brought home from Brighton beach and placed, for aesthetic effect, on the mantel piece. We can call it Pebble. Alternatively, if we do not believe in pebbles let us take the simples that are jointly arranged 'pebblewise' and name them collectively 'Pebble'. We have named different things in each case, but let us stipulate that the same collection of matter will be involved in whatever is picked out.

'Pebble', on a beach or on the mantel piece, will be supposed by most people (even most people in the philosophy room) to be an object. Those of us who think that pebbles exist would be inclined to suppose that they are ontologically independent of us; that they would exist even if we did not. They are also,

presumably, weakly objective: they would be the way they are even if no one ever existed to see them.

The dictionary definition of 'pebble' is:

> 'A small, smooth, rounded stone, worn by the action of water, ice, or sand' (www.OED.com accessed 25 July 2009)

Leaving aside questions about what exactly dictionaries record, this seems for the most part to capture our notion of what is involved in something's being a pebble. In Jewish traditions pebbles are left on gravestones, but for most others there does not appear to be much in the way of a social role for pebbles. Though, those of us who have experience of pebbles may well associate them with various things and experiences. Such associations might include, for instance, beaches, rivers, and the practice of skimming them across the surface of a sea or a river.

We might suppose that there are or could be natural languages that do not include a separate word for pebbles. Such languages may have developed in areas where there are few watercourses, or where the geology was unsuited to the production of pebbles. Such a language might fail to distinguish pebbles from any other sort of rock.

Despite the fact that the word 'pebble' might be evocative for some people it would be difficult to make a case that pebbles are artefacts. For many, possibly most, of us no significant social role is associated with them. None the less, at some point in the history of our language members of the linguistic community speaking it or its predecessor felt it useful to distinguish pebbles from other things. The Oxford English Dictionary offers a number of theories for how the word entered our language. What seems clear is that it has been there for some centuries.

The object concept 'pebble' then, is well established. A normal English speaker with the requisite range of experience (i.e. a range of experience which has enabled him or her to correctly gain the object concept 'pebble') will be able to go to a beach and, if there are any there, discover pebbles. That is; upon arriving at the beach they will find things (or, arrangements) that fit the expectations they have of pebbles. A non-English speaker, even a speaker of a language that has no word for pebbles, will also be able to discover pebbles on a beach— though it is likely they will not call them pebbles.

Pebble is, or so we may assume, made of an arrangement of different chemical atoms, composed of a number of different elementary particles, some of which might take the form of particles that we can term 'simples'. These simples stand in certain relations to each other by virtue of which they produce the properties of Pebble. The properties of Pebble, its mass, colour, hardness and so on, jointly comprise the form of Pebble. The simples involved in Pebble then comprise an 'arrangement' of simples. The relations between the simples which give rise to the form of Pebble, can be understood as Pebble's efficacious sub-structure. All of the relations between simples (whether efficacious or not) constitute Pebble's structure. The structure and the simples taken together constitute Pebble's arrangement formation.

The form of Pebble is involved in all sorts of interactions with other things, and is such that we can reliably predict how it will interact with many of them. When propelled in the right way Pebble will bounce off other pebbles, skitter along concrete, sink in water (or possibly skim along the top of it). This pattern of interactions and potential interactions is what we will call the 'formal role' of Pebble. It is, according Eliminativists, entirely explained by the actions of the Pebble formation, rather than a single thing called Pebble, but Eliminativists must allow that there is such a pattern of relations. To the extent that pebble has a place in social interactions, we may also say that it has a 'social role'.

We might then suggest the following: our 'object concepts' are key to the way that we understand the world in which we find ourselves. They categorise and regiment the world around us in a way which enables us to make sense of it and act effectively. For any given sort of object we are likely to have a collection of concepts that jointly say what is required for something to be a member of that sort. We can call this collection of concepts for any given sort our 'conception' of that sort of object, and for a particular object, our 'conception' of the object. We might suppose that part of the conception of a particular object will be its social role and some notion of what, in relation to forms, we termed a formal role. That is, the conception will include the way that the object fits in with our social structures, what if anything it is used for, and it will give us some sort of idea of the causal interactions it can engage in, as well of course as the sorts of changes it can survive.

Following Thomasson ((Thomasson 2007) pp. 39-41) we can distinguish between the application and co-application conditions of object concepts. That is, the conditions that govern when it is correct to count someone as referring to, or establishing reference to, an object of a certain type on the one hand, and the conditions under which it is correct to conclude that one is referring to the same object on consecutive occasions on the other.

What are here being called object concepts can be seen to have a good deal in common with what are more normally termed 'sortal concepts'. The notion of a sortal concept comes from Locke ((Locke 1689): *Essay*, III, iii, 15) via Strawson, (Strawson 1959) who uses the term to distinguish concepts which provide a counting principle from those which do not, to Wiggins.

A sortal concept can be distinguished from a 'property concept' by analogy to the grammatical distinction between nouns and adjectives. Nouns tell you what a thing is, and adjectives tell you about a property or properties of a thing. Similarly, sortal concepts categorise the objects in our environment in terms of

the kind of object they are and property concepts collect things (which may be of various sorts) into things that have a qualitative similarity.

Wiggins refers explicitly to the way that Strawson introduces the term, which is as follows:

> 'A sortal universal supplies a principle for distinguishing and counting individual particulars it collects. Characterising universals on the other hand, whilst they supply principles of grouping, even of counting, particulars, supply such principles only for particulars already distinguished, or distinguishable, in accordance with some antecedent principle or method.' ((Strawson 1959) p. 168)

We might then count the number of red things in a kitchen and the number of jugs. But, or so Strawson appears to be suggesting, there is a difference in our activity in each case. In counting jugs we are identifying objects as jugs and adding them to our jug tally. In counting red things, we are identifying things of whatever type and then determining whether or not they are also red things; where they are we add them to our red tally.

Sortal concepts play a central role for Wiggins. In particular they are a key part of his account of the individuation of everyday objects. For Wiggins, to make the claim that two things are identical, e.g. that $b=c$ is to say that they are the same f where f is a sortal concept. That is, the sortal concept under which an object falls is determined in an important sense by what that object is. In order to say that one thing is the same thing as another, according to Wiggins, one must have a notion of what the thing in question is, which is to say, what sortal concept it falls under. This is what 'organizes our actual method' ((Wiggins 2001), p. 56) of reidentifying things over time.

The thought here is that when asked whether, for instance, we are playing with the same ball now as we were earlier, we go about answering the question in terms of what is required for the persistence of a ball. The ball may have been

scuffed in the course of play. This does not mean that it is a different ball, it would mean though that it was, for instance, a different mereological sum of simples to that which we were playing with earlier. We know, roughly, what has to be the case for a ball to survive and to be counted as the same ball. Which means that we have a notion of what sort of spatio-temporal continuity would be required for this to be the same ball as we played with earlier. Crucially for Wiggins, establishing the identity of something at the present time with something with which we were earlier acquainted (or where we know of its past properties) licenses certain sorts of inferences. For instance, if we know that the ball we started playing with belonged to Percy, and that this is that very ball, we may conclude that this very ball belonged to Percy. Having identified something at two different times one is in a position to infer facts about its properties at those times on the basis of Leibnitz's law.

The key role that sortal concepts have in Wiggins' account of individuation and of the identity of objects leads one to suspect that use of the notion of sortal concepts is in some sense question begging against the Eliminativist.

Sortal concepts are explicitly categorising in two ways. Firstly, because of the way that sortal concepts are supposed to work, anything that falls under a sortal concept must be, by its nature, an individual. What is more, it is not the abstract sort of individual that property instances might be thought to be, but the sort of individual that is countable, that may be distinguished from other individuals of the same sort and whose path through the world should be in principle traceable. It is the sort of individual that has properties rather than the sort of individual (if there are such things) which is a property. Secondly, by virtue of falling under a particular sortal an object may also fall within a wider scheme of categorisation. Tibbles falls under the sortal 'cat', but also 'animal', 'mammal', and 'organism'.

An Eliminativist might then consider the introduction of a notion of sortal concepts to be question begging on two grounds. The first of these is that it

might be thought not at all clear how to make sense of the notion of a sortal concept if you do not have some prior idea of what it would be to be a persisting individual. Wiggins, like most philosophers, assumes from the outset the existence of medium sized concretia. If there are really no everyday objects then how are we to make sense of the notion of one persisting? According to Wiggins the application of our sortal concepts is exhibited in the way that we track the history of everyday objects through the world, but it is exactly this activity of tracking objects that Eliminativists about everyday objects want to question. Their claim is that there is nothing to be so tracked, and it is not clear how sortal concepts could be made sense of at all without an ontology of objects for them to apply to.

The point may be sharpened if we consider Wiggins' use of the notion of a sortal concept in the context of Aristotle's account of what a substance is. Aristotle, at the start of the *Metaphysics Z* (1026ª33 (Aristotle 1984) p. 1620) famously takes substances to be those things of which properties can be predicated but which cannot themselves be predicated of anything else. The substances in question are not the broad metaphysical categories of Descartes (i.e. mental and extended substances), but rather, everyday objects.

If we consider substances in this way, then it should be clear that the difference between sortal concepts and other sorts of concepts is just this; sortal concepts pick out and categorise substances, other concepts pick out properties of substances. It is not that the predicate 'pebble' picks out *a property* of something; rather it picks out a particular *sort of thing* (or it distinguishes one sort of thing from other things). The application of sortal concepts seems to presuppose the existence of substances or individuals which are picked out by those concepts. What is more, it presupposes that the identity of those individuals is tied to the sortal that they fall under; it is not that there is a thing, and that thing has properties such that, that thing happens to be a statue, but if it were to go through gradual enough change it (that very thing) could be turned into an

aspidistra. Rather, there is a thing, which is a statue, and were *that thing* to stop being a statue, then it would cease to exist.

The Eliminativist part of the Organicist thesis of course denies that there are substances that the vast majority of sortal terms pick out. Organicists do hold, however that sense can be made of object concepts. Van Inwagen supposes that most applications of object concepts in making statements about the world are 'made true' by arrangements of simples; which means that he denies that the application of object concepts entails the existence of substances that they pick out. Merricks holds that most everyday applications of object concepts to make statements are, strictly speaking, false. They are, however, according to Merricks sometimes 'nearly as good as true', where they involve there being something that is an F, but there is an F-wise arrangement of simples. The plausibility of the idea that we can apply object concepts to a world without objects will be discussed in detail in Chapter Five of this thesis.

The Organicist who is the main target of this thesis, of course, does think that there are some persisting objects (i.e. organisms), but he or she may still think that there is a problem with the very idea of sortal concepts fully filled out in the way that sortalists do, as follows.

The second ground upon which the Eliminativist might think the introduction of sortal concepts as question begging is that their introduction brings with it a scheme of categorisation which Eliminativists are likely to find unpalatable. Van Inwagen, for example, could argue that on his account there are precisely two sorts of objects; organisms and simples. Thus, the only sortal concepts that may be instantiated are 'organism' and 'simple', just as the only things there are on such an account are organisms and simples. The scheme of categorisation that most of us have in mind when talking about sortal concepts includes more than this, covering the full gamut of everyday objects. The Eliminativists' objection to the introduction of sortal concepts can be sharpened further by considering that it gives rise to collocation of a sort that both Merricks and van Inwagen

object to. Typically both essentialists and Eliminativists hold that identity is not relative to sortal types (and that will certainly be assumed here), and (as Wiggins argues at the start of (Wiggins 2001)), if one accepts that the same piece of matter can instantiate two different sortals at one time, where those sortals have different persistence conditions, one cannot accept that there is just one thing there.

It will be argued in Chapter Five that whether or not the Eliminativist accepts the notion of sortal concepts, if they want to make use of the O-arranging manoeuvre then they are committed to our having a fairly sophisticated scheme of object concepts. What is more, they will need to accept that in actual fact discourse utilising those concepts is fairly disciplined and, outside of philosophical make believe, it is rare that we face real problems applying our object concepts. The point is that these object concepts cannot be sortal concepts as classically conceived, because the very notion of a sortal concept requires the existence of everyday objects.

For now, it will be helpful to distinguish 'object concepts', which pick out bits of our environment and classify them as being such and such an object, from sortal concepts, which pick out things in our environment and *identify* them in terms of the things that they are. This way we do not beg any questions against the Organicists. What is more, the role of these concepts should be clear; they are just the everyday concepts that we use to discuss objects with the sortalist commitments stripped away.

The idea behind the account of objects being developed here is that our object concepts are satisfied by regularities in our environments; that is, the object forms that were discussed in the previous sections of this chapter satisfy them. In the remainder of this chapter we will fill out some of the consequences for this account and address some potential worries about it. We will revisit object concepts in Chapter Five, when we will address the question of how plausible it

really is to suppose that there are no non-living everyday objects but that we can still effectively deploy our object concepts in order to navigate the world.

2.3 A theory of everyday objects

The suggestion being made here then is that everyday objects are constituted by object-forms that satisfy our object concepts. Further, we argued above that instances of object forms at a particular time are (almost always) identical to an arrangement-form at that time. This final section of the chapter examines some of the broader features of the theory being developed and the account it gives of everyday objects.

In sub-section 2.3.1, the account of everyday objects associated with functional-bundalism is made explicit. In sub-section 2.3.2, it is argued that we can think of everyday objects as themselves being elements in causal systems. Finally, in 2.3.3 it is noted that the account presented here is based on a particular plausible intuition about what needs to be the case for there to be everyday objects, and we see that this intuition has general application to ontological questions.

Before proceeding, however, the remainder of this sub-section broaches the following question:

> What makes a given form-simpliciter an object form?

Which is to say, what distinguishes those collections of properties that constitute everyday objects from arbitrary or random collections of properties? As already advertised it will turn out that object-forms are those forms suited to satisfy our object concepts. The claim being made, then, will be as follows:

> Objects are constituted by those forms that coordinate in a manner that is appropriate for satisfying our object concepts.

As has already been noted, Organicists have to accept the existence of object and arrangement forms. Forms are a consequence of their own position with respect to the arrangement of simples. As such they operate in the context of this work as non-controversial stand-ins for everyday objects. Organicists differ from the rest of us in holding that there are no everyday objects, but they hold in common with us that the things that we think objects do, do get done. We have here taken this seriously. We have taken it as a commitment to there still being those powers that we normally attribute to objects, even where there are no objects.

If we take a form-simpliciter to be any collection of macroscopic properties, then it should be clear that there are many more arbitrary or gerrymandered forms-simpliciter then there are forms that could plausibly be supposed to constitute objects. My mass, the colour of the moon, and the hardness of the Queen's eye would constitute a form-simpliciter. Assuming then that we hold that there are objects, and that they are constituted by forms, we will need some further basis for distinguishing which forms constitute objects and which do not.

One basis for doing this would be to appeal to coordination. The object-forms discussed here are not just arbitrary collections of properties; they are collections of properties that coordinate appropriately. What distinguishes object-forms from other forms, we might think, is the way that the properties involved in the form go together. We might suppose, for instance that something like the following is the case:

> Some collection of properties, P_1 to P_n is an object C if and only if P_1 to P_n are appropriately coordinated.

Accepting something along these lines, however, would require an adequate account of 'appropriate coordination'. We might term the problem of determining when some properties are 'appropriately coordinated' the problem

of unity. The same question is at stake here as when we ask, when do we have enough of a unity to constitute an object?

To treat the matter in this way, however, puts the cart before the horse: we have, in practice, no problem in distinguishing appropriately coordinated properties from properties not so coordinated. The appropriately coordinated properties are those that we take jointly to be objects.

The coordination requirement means that there will not be as many of these sorts of coordinated 'forms' as there would be, for instance, mereological sums. It is not the case that just any collection of simples will coordinate in the required way, or will produce coordinated collections of properties. Nor is it the case that just any collection of properties will be appropriately coordinated. In the next chapter we will discuss different options for accounting for this sort of coordination. Still though, there will very likely be coordination which we do not in the normal run of things want to say gives rise to objects.

The tip of a compass and the earth coordinate in an interesting way. In particular, it seems that there is a causal connection which means that the tip of the compass, when uninterfered with remains always orientated in a certain way with respect to the planet. It would, perhaps, seem arbitrary to rule that the coordination of all the different parts of a car means that there is an object that is a car, and simultaneously to hold that the coordination of a compass and earth makes no compass-earth object. For that matter, there is a sense in which big collections of things, such as the British rail system, might be said to coordinate (at least on a good day). While we could treat these large systematically related collections of objects as constituting very large single objects in their own right, to do so would surely be a hefty stretch of our normal use of the term 'object'.

The fact is that some forms in our environment are salient to us. For one reason or another it matters to us that they are the way that they are. This may be

because of their spatial relations to us (e.g. the form arising from the arrangement constituting the bus (atoms arranged bus-wise) bearing down on us), or because it is important for us to be able to recognize them (e.g. the arrangement formations that constitute things that are good to eat). Our ability to track these salient forms (and ignore non-salient forms) is something that can reasonably be assumed to be an evolutionary fitness trait: an organism's ability to effectively track the regularities in our environment will, *ceteris paribus*, tend to result in a better chance of survival for that organism.

One thing to note in connection with this though, is that we do in fact use the word 'object' in fairly diverse ways. If the term applies as well to a water molecule as it does to an aeroplane, there seems to be little harm in supposing that there might be an extended quasi-technical sense in which things such as transport systems are objects. It is quite compatible with this that what we normally think of as everyday objects be a more restricted class of entity. We might think of objects on a scale of everydayness, with those that we actually consider as unities being more everyday than those that we do not.

We can summarise the picture so far developed as follows: We have introduced a notion of regularities in our environment which constitute 'forms'. These forms are regularities in part because of the way they function in the physical systems that make up the world in which we live. Although we could, if we wished, identify arbitrary collections of properties, it is only those collections which coordinate and function in these physical systems in a way appropriate for the satisfaction of our object concepts that are eligible to constitute objects.

The question that needed to be answered here was as follows: What distinguishes those forms which constitute objects from those forms which do not? I have suggested that the distinction should be made on the basis of which forms are of a kind suited to satisfying our object concepts, with those object concepts we have emerging on the basis of the needs that we have for

communicating, thinking and (perhaps most importantly) acting on things in our environment.

2.3.1 The theory of objects: What are objects?

The claim being made then is that objects are constituted by object-forms. This can be thought of as a 'no more than' claim; it claims that no more is needed for an object to exist then there being a form which coordinates in the appropriate way to satisfy our object concepts. Organicists, by contrast, can be taken to be arguing that there is something more that is required for there to be an object, with that something more being composition.

We might want more from a theory of objects, however, than a 'no more than' claim; we might want it to say something positive about what objects are. One thing that we might want is for objects to turn out to be mind independent on the account given. Someone looking at the account presented so far may worry that it makes what objects there are a function of what object concepts we have.

It was claimed above that objects are constituted by those forms that coordinate in a manner that are appropriate for satisfying our object concepts. We might conclude from this that what objects there are is a matter of which of our object concepts are satisfied by the regularities in our environment. In considering this proposal, however, it is important not to lose sight of where, on this sort of account, our object concepts come from. Our object concepts are, on this view, a response to the environment we find ourselves in. They are, literally, tools for making sense of the physical world.

Starting from the position of someone with a particular scheme of object concepts and who is involved with their environment, it is difficult to separate objects from the concepts they fall under. The form which, because of the particular harmonised macroscopic properties in front of us leads us to conclude that there is a tomato in front of us is only a 'tomato' because it

happens to be a tomatoey form. That is, a form that behaves in a way that satisfies our tomato concepts. On the other hand, we only have the concept 'tomato' because we are occasionally confronted with tomatoes—that is, tomatoey forms.

This offers one way of answering the question 'what are objects?' At this seemingly trivial level, we might take the question to be about individual sorts of object, such as pebbles, chairs and tomatoes. We might then say that tomatoes are things that are tomatoey. They are things which have the right properties to make them a tomato: being a fruit, being a member of the *solanaceae* order, and so on. Similarly with pebbles, being a stone, being eroded in a certain sort of way, being a certain (admittedly vaguely defined) size. It is difficult to give a non-trivial answer to the question at this level because the properties that make a form a 'tomato' rather than a 'cabbage' are just those properties that our concept of 'tomato' requires for tomatoes. We can claim then, that for any object O, that object exists just in case the object concept <O> is satisfied.

Another way of reading the question 'What are objects?', however, would be as a question about the metaphysical category of objects. Given that we have object concepts, what is it that they apply to? The suggestion being made here is that objects just are regularities in the environment around us, manifested in what were above called forms.

It should be fairly evident that what regularities there are in our environment is (at least if we exclude those that we have created ourselves) a mind independent matter. Thus, what forms there are is what Peacocke[51] terms 'weakly objective'. Something is weakly objective if and only if it is the way that it is independently of there being any observer of it.

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[51] Seminar, Summer 2008, at Department of Philosophy, University College London.

In this sense, what particular objects there are is objective. Given the tomato concept that we do in fact have, whether some form is tomatoey enough to be a tomato is entirely independent of whether or not there is anything around, or even in existence, to observe its tomatoey endeavours. Naturally, we could have had alternative concepts. But what matters in thinking about the world is how it fits into the concepts that we have, and although we can make sense of the idea that we could have had other concepts, we cannot make sense of how the world would be understood in terms of those altered concepts without ourselves actually having those other concepts.

This now begins to make objects look a little mind dependent, and this might prompt one to think that the view is in some sense 'anti-realist' (see the introduction to (Wright 1986)). But, consider that by at least some tests for realism, this account passes. In order to deem an account of everyday objects as 'realist' about objects, it is at least necessary that it yield affirmative answers to the following two questions:

- Could there be objects of which we have no knowledge?
- Could there be objects for which we have no concepts?

On the view being advanced here, the answer to both of these questions is yes. There is nothing on such a view to say that we have discovered all of the instances of objects for which we have concepts.

What is more on this view, there could be objects undiscovered which we do not currently have the concepts to think about—so long as they *could* be fitted into our conceptual scheme. Note that it is not necessarily our current conceptual scheme that they have to fit with. Some future revision of our current conceptual scheme will do, even if it is one that requires the removal of lots of our current concepts. The point is that the form has to be suited for fitting in with our conceptual scheme in this way. If some form cannot be fitted

in with either our current conceptual scheme, or some past or future version of it, then it is of little concern to us; we could never think of it in any case.

This account then, still allows that there are, almost certainly, objects for which we do not have object concepts. This means that, like Universalism, this account has to allow for more objects than we generally acknowledge. According to this story though, unlike in the Universalists' there is a strong explanation for why we have the object concepts that we do. On the universalists' account it just seems arbitrary that some 'wholes' are associated with being an object of a certain kind, and some closely related collection is not (which is, in fact the basis of Unger's rejection of everyday objects—this thesis can be taken to be arguing the other way). On my account, the objects we recognise are just those regularities in our environment that give rise to our object concepts.

There remains the question of whether there could be an object that is inconceivable to us under any revision of our conceptual scheme. This account allows that there might be regularities that we cannot apply object concepts to, but beyond this it does not allow for inconceivable objects. It is worth noting in this connection however, that the account offered here is supposed to be an account of everyday objects. A thing of which we could not ever conceive would, one may suppose, be a tad unusual. As such, we have reason to be sceptical about regarding it as an everyday object.

2.3.2 Object forms as elements in causal systems

Everyday objects have been discussed here in terms of collections of macroscopic properties, these properties being conceived of as physical properties. The counterfactual judgements that we are able to make about everyday objects are the sorts of judgements that enable us to be effective agents in the environments in which we find ourselves.

It is fairly natural to move from this way of thinking about everyday objects, to thinking of them as elements, or parts, of causal systems. We exist among (and as) causal systems. These systems have sub-systemic elements which are essential to the state and effects of the system as a whole. We understand the world around us as operating in terms of causes and effects, and we understand the objects within these systems as being the things that give rise to and receive causes and effects.

We can think of a number of different sorts of causal systems that we exist within: weather systems, eco-systems, and economic systems, and more controversially, social systems.

The term 'system' is usually used to encompass a number of objects which are, in some way, related. A causal system then, is a collection of objects which are causally related in some way. It would be a stretch to think of all of the objects of the world fitting into such a system; while we may plausibly envisage any given physical object being brought into contact with any other, it is difficult to really think of all objects forming a system in anything but the loosest sense of the word.

Accepting the forgoing, we might think of a 'functional' system as a set of objects which are related in a way that tends to produce some given outcome. Thus a car is a functional system in that it is a group of components that together work to produce a means of locomotion.

If we take seriously the notion of objects (or object-wise arrangements of simples as the Organicist would have it) as bits of our environment about which we can make the sorts of counterfactual predictions mentioned above, then one of the distinguishing features of object-forms is that we understand them as things that we can relate to each other as part of a causal system. To a large extent, we get causal work done in the world by using these sorts of things to

make small functional systems (though it should be noted that often the mechanics by which these systems work will remain very opaque to us).

If this is the right way to think about object forms, then it makes sense that these are the sorts of collections of macroscopic properties that our object concepts capture; that would give a purpose to object concepts.

2.3.3 Functionalism about everyday objects

The account of everyday objects that has been given could be termed 'functionalist' in the sense that it differentiates those forms that are objects from those that are not in terms of their suitability to fit our object concepts, and we might think that the usefulness of forms for fitting in with our object concepts is a matter of utility. That is, that our object concepts develop because they are useful and thus the objects that they pick out are, in a sense functional. More importantly, objects on the view above are understood largely in terms of the things that they can do. That is, in terms of their causal powers. It is also analogous to the position named 'functionalism' in the philosophy of mind in that, just as that position allows for the multiple realisability of mental states, the position outlined here allows for multiple realisability of everyday objects.

This then suggests what might be termed a 'functionalist' approach to the ontology of everyday objects based on the notion that objects are conceived in terms of what they can 'do'. This functionalism about everyday objects is based on a very plausible intuition. The intuition is as follows:

> If all the chair things get done, then there are chairs[52].

It should be clear that the same intuition applies to any other kind of everyday objects. In fact we might explicitly schematise the intuition as follows:

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[52] Compare with the quote from van Inwagen on p. 152

If all the O things get done, then there are Os

It is this intuition about everyday objects that makes it plausible to suppose that chairs exist in the two worlds described in Chapter One (see p. 60). One thing that functionalists and Organicists can agree on is that the work of objects still gets done. The functionalist idea is that in having a certain object concept, the conditions for the satisfaction of that concept are set. If the properties in the world are arranged in such a way as to meet those conditions, then the object-concept is satisfied and there is an object of the requisite type.

Starting from this rather simpleminded intuition we can suggest a similarly simpleminded way to approach ontological questions about physical objects and properties.

The simple empirical approach to ontological questions is as follows: In order to determine whether there are things of some kind K, one first determines what would have to be the case for things of kind K to exist and what would be the consequences of Ks existing, then one goes and finds out whether what would have to be the case for kind K to exist is in fact the case, and whether the consequences are possible and/or actual.

Adopting the simple approach with respect to the question of everyday objects it would seem that we can identify the source of the functionalist's disagreement with the Organicist in the question of whether or not in order for everyday objects such as chairs to exist they must be composite. It was argued earlier that they need not be, at least in as far as Eliminativists have a meaningful notion of composition.

The simple approach to ontology is, in effect, the way that physicists find out about the existence of such things as atomic particles. Of course, sometimes we just discover things. It is not so much that we were wondering whether there

were things such as a kangaroos and went looking for them, as we were wondering around our environment and just came across them. The same might be said of everyday objects. However, faced with the claim that there are no everyday objects, the simple approach to ontology seems to offer us a reason for presuming that there are.

The simple approach to ontology need not be regarded as simplistic. It allows, for instance, that different categories of entity may need different sorts of evidence to establish whether they exist. Thus, to discover that some physical property exists it is enough to discover what would physically need to be the case for it to be instantiated, and then to see whether the conditions for its instantiation could be met, or are now met. To test for a physical property one will have to do some empirical tests.

Thus, to find out whether a posited subatomic particle exists, one figures out what the physical effects of that particle's existing would be (if necessary manufacturing the conditions that would bring such effects about), and then one does some tests to find out whether those effects actually occur.

We might think that metaphysical questions require a different approach. One ontological debate that will serve as an example is the debate about the existence of universals. Universals, if they exist, are entities that can be instantiated simultaneously in a number of different places and are such that they are wholly in any place in which they are instantiated. They explain what it is that objects with the same properties have in common. They may be distinguished from 'tropes', which, like universals are supposed to account for the properties of objects, but are not supposed to be capable of multiple instantiation: tropes are aspects of an object that are held to resemble tropes of the same type.

Tropes and universals, unlike the Higgs particle or phlogiston, are philosophical rather than physical posits. To determine which of tropes or universals exists requires philosophical theorising rather than empirical investigation. Though it

should be noted that that does not have to imply that there is no truth of the matter: tropes and universals each have theoretical costs and benefits, to posit both would result in incurring all the theoretical costs of each.

The basic approach to ontology in introducing metaphysical posits however, is not significantly different to the physical case. In order to establish whether a metaphysical posit is warranted, one works out what the theoretical and ontological consequences of making that posit would be, and then examines whether those consequences are possible (i.e. whether the posit rules itself out the grounds of having contradictory consequences) and whether they are acceptable. In either the physical or the metaphysical context we are starting out by working out what would have to be the case if the posit existed and what would need to be the case for it to exist, and then we are finding out whether those conditions are met. The difference lies in the role of experience and reason in determining whether the required conditions are met.

It may be that one lesson to be learned from Quine's work should be that there is no hard and fast distinction to be drawn between the ontological questions asked by physics and those asked by philosophy. In 'Two Dogmas of Empiricism', Quine's opposition to analytical truths was opposition to precisely the thought that there are some questions that are answerable only by *a priori* methods (see also (Quine 1951a) where he responds to (Carnap 1950)). While the simple approach to ontology allows that we might look for different kinds of evidence for different categories of entity, it does not require that this be the case. What we should be insistent about, however, is the sort of evidence that is going to be acceptable for the existence or not of everyday objects.

What Eliminativists about everyday objects (in particular, and compositional ontologists generally) do, is apply the sorts of methodological considerations that would help one conclude whether certain metaphysical posits are justified to questions about whether or not we are justified in positing everyday objects. What allows them to get away with this is the suggestion that things would seem

exactly the same even if there were no everyday objects. Their argument for this, how it is deployed, and how it should be dealt with, are addressed in the Chapters Four and Five.

There are a number of things that one might think are wrong with treating everyday objects in the same way as we do such metaphysical posits as universals and tropes. One is the immediacy of our interaction with everyday objects—it is difficult to see how any argument for the non-existence of everyday objects could be more convincing than our experience of them.

In thinking about everyday objects, one should start from the perspective of someone who is interacting with them. Objects occupy a particular place in our lives, and we locate ourselves in the world in relation to the objects that we take the world to be made up of. By the same token, our object concepts, those concepts that we use to think about the objects in the world around us, are an essential part of our mental economy. We cannot think about the world we inhabit and interact with in a way which does not make use of our object concepts. This is the starting point for philosophical consideration of the nature of everyday objects, and to start from a more abstract perspective, such as that of compositional ontology leads one to make mistakes about what objects in fact are. Functional-bundlism can be articulated from the same sort of abstract perspective as compositional ontology, but it makes essential use of our actual object concepts, and so cannot properly be made sense of except within the context of a scheme of object concepts.

Chapter Three: substance and property bundle views

The previous chapter presented a view of objects as constituted by those 'forms', which is to say, those collections of regularities or properties, in our environment that satisfy our object concepts. The suggestion was that there is no more to there being an everyday object of type F, then our F concept being satisfied by some form. It was noted that in most actual cases (i.e. in cases except for those that are relevantly similar to the two hypothetical worlds presented in Chapter One) the forms which satisfy our object concepts are the result of arrangement structures in our environment.

There is a certain sense then, in which the account presented here might be considered a 'property cluster' account of everyday objects, where this term picks out theories that treat objects as collections of or 'clusters' of properties.

This chapter will place the view within the context of a traditional empiricist approach to everyday objects. In particular, the view resembles the account of everyday objects that Mackie (Mackie 1976) argues Locke should have adopted in *An Essay Concerning Human Understanding*. The account given in the previous section has similarities to the views of other philosophers who take the basic building blocks of reality to be properties (conceived of as either universals or tropes) and objects as complexes of such properties[53].

A good deal of philosophical work was done on the nature of physical properties in the 20th century, with notable contributions from Russell (see

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[53] See also *"Alphabetical" Parts* above on p. 32.

(Russell 1912) chapters nine and ten), Stout (Stout 1921), David Lewis (Lewis 1983a), Keith Campbell (Campbell 1990), Peter Simons (Simons 1994) and many others). The theoretical terrain has been most completely mapped by David Armstrong (Armstrong 1978a), (Armstrong 1978b), (Armstrong 1989) however, and is now fairly well understood, though debates remain. The theory of properties is relevant to this thesis in the following sense: one of the issues that any theory of properties has to deal with is how properties are related to the individuals that instantiate them.

The theory presented here though is a theory of everyday objects. The properties we are interested in are the properties of everyday objects, and everyday objects tend to be macroscopic. While it is not here being suggested that there is a difference of type between things that happen to be visible to the human eye and those that do not, it might still be thought that something needs to be said about property instantiation at the macroscopic level. Theorists about properties move fairly easily between discussions of properties of macroscopic and microscopic objects. Colours are a favourite as examples of properties[54], but then so is the electrical charge of an electron, or the mass of a molecule. It has been suggested that there is a tension here. Schaffer (Schaffer 2004) suggests that there is a tension between what he terms 'scientific' versus 'fundamental' conceptions of sparse properties. The 'scientific' conception of properties takes sparse properties to be any scientifically respectable properties that occur at whatever level amongst objects, and the fundamental conception takes them only to apply at the level of fundamental physics. Schaffer's conclusion is that we should adopt a scientific conception of properties, while allowing that the properties of fundamental physics are in some sense primary.

This is an issue closely related to van Inwagen's concern about composition and 'rules of composition', where the properties of composite things are supposed

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[54] See for instance (Russell 1967) reprinted in (Mellor and Oliver 1997) p. 51, similarly Quine in (Quine 1953) also uses colours once he comes to discuss Universals (see in (Mellor and Oliver 1997) p. 81) or (Williams 1953).

to be derivable from rules of composition (see (van Inwagen 1990) pp. 43-44. and pp. 278–279). Examples of a rule of composition might be something along the lines of 'the mass of an object is equal to the mass of its parts'. It should be noted that these rules appear to apply to object-wise arrangements (what van Inwagen in the later parts of *Material Beings* terms 'virtual objects'). In the case of non-living everyday objects Organicists hold that no composition takes place, but their thesis still relies on the macroscopic properties generated by collections of simples. Thus, supposing that sparse properties only exist at the fundamental level, one would need an account of how that happens. The rules that van Inwagen terms 'principles of composition' are not strictly rules that, even on his account, only apply to composites. Rather they are rules of microphysical to macrophysical causation and rules for determining the joint properties of objects that are concatenated in certain ways.

Suppose one were to take a conception of sparse properties as being only those that applied at the sub-atomic level, or at the most fundamental level there is (so perhaps only at the level of quarks or such like). Then any macroscopic properties would have to be held to be not really sparse properties. That is, they would have to be merely 'abundant'. Since the difference between sparse and abundant properties of objects is that the former and not the latter are causal relata[55], this would amount to saying that macroscopic properties are not causal properties. Which is to say, all causation happens at the atomic or sub-atomic level.

Though they rarely discuss properties in these sorts of terms, Organicists would presumably be satisfied with this sort of conclusion in most but not all cases.

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[55] In fact, there is a lack of consensus about how best to draw the distinction between sparse and abundant properties. There has been a tradition of treating facts or events rather than property instances as the relata of causal relations (see e.g. (Davidson 1967)). However, when Lewis coined the distinction between sparse and abundant properties he took the intuitive basis of the distinction to be the idea that sparse universals 'ground the objective resemblances and the causal powers of things' (Lewis 1983a) p.345. Given this, it does not seem unreasonable to take property instances as causal relata. See Whittle (Whittle 2003) for an account along these lines.

When they say that the properties that we associate with a chair or a table are really generated by the joint action of a chair-wise or a table-wise arrangement of simples, they are, presumably, suggesting something along these lines.

Organicists are committed to macroscopic properties in two ways. In the next chapter we will see that we they are committed to there being macroscopic properties associated with arrangements of simples. The thing to note about this sort of macroscopic property is that Organicists do not suppose them to be properties that are 'had' by particular things. Rather, such properties are supposed to be the consequence (one presumes) of properties of simples.

More interestingly, the positive part of the Organicist position requires them to hold that some things (living things) have properties that are not dependent on the microphysical level. This is clearest in Merricks' work. His argument for the existence of living things rests on the possibility of their having properties which are not the causal result of the actions of their parts. The property of 'being conscious' is the main exemplar of such a property (see (Merricks 2001) chapter 4, and (Merricks 1998)). Thus for living objects at least, the Organicist must hold that their properties are not all merely a consequence of the workings of the properties of the subatomic parts.

As we shall see in Chapter Six, this is central to Merricks' argument in a way that it is not to van Inwagen's. However, there is little reason to suppose that van Inwagen would reject the notion that living things could have properties in their own right, and it is difficult to see how he could resist the conclusion. In Section 12 of *Material Beings* ((van Inwagen 1990) pp. 115-123), for instance, he argues that some living things must be composite because he exists and he is composite. He says that he thinks he exists for basically Cartesian reasons. But, if it would be possible for some simples to have the property of thinking without thereby composing a thinking thing, it is difficult to see why Cartesian reasons would enable him to reach this conclusion.

Merricks is explicit in supposing that there are living creatures with properties that are not caused by their microscopic parts, and it is difficult to see how van Inwagen can deny it. We may take it that Organicism is consistent with the claim that macroscopic objects can instantiate sparse properties.

There remain, however, a number of issues that any property-cluster theory of objects must approach. Since the view presented here treats macroscopic objects as collections of macroscopic properties, an account will be required of what is involved in some properties' belonging to the same object. In the previous section it was noted that the relevant properties coordinate in a particular way. Given that those property clusters that we take to constitute objects are also associated with particular arrangement structures we can be fairly sure that this coordination is not accidental. This means that we are able to gesture towards an account of the relation between macroscopic properties and macroscopic objects. We do not need at this juncture to give a complete account of property instantiation. We only need to be able to explain why it makes sense to think of macroscopic collections of properties as constituting entities in their own right.

The sections that form the bulk of this chapter place the property cluster theory advanced here in the context of contemporary theories of properties and objects. In particular the application of those theories to the properties of macroscopic everyday objects are considered

Two sorts of property cluster theory are distinguished: bundle theories and 'substance-attribute' theories. The case for positing some sort of substrata to bind properties together into objects is discussed. Three main reasons for positing substrata are examined. Of the three, it will be argued that one can be eliminated by adopting trope theory, and an argument is produced against another. We are left with what will be termed 'the coordination problem', which is the problem of why the properties of an object coordinate with each other in a systematic way. It is suggested that in the case of everyday objects we

might suppose that the notion of an efficacious arrangement sub-structure introduced in Chapter Two could fulfil that role. It is suggested that Mackie's reading of Locke on objects accords well with this sort of picture.

Finally, a tension is introduced between the sort of bundle theories discussed so far, and a sortal-essentialist account of objects. It is argued that in many cases what determines the sortal category of an object are relational, and sometimes, social properties of the object. Property-cluster theories on the other hand tend to deal with sparse properties, and it is generally assumed that the properties in question are intrinsic to the object.

3.1   Property cluster theories: substance-attribute or bundle?

Within the range of property cluster theories of objects we may distinguish 'substance-attribute' theories from 'bundle' theories. (The distinction between substance-attribute and bundle theories is clearly explained in (Armstrong 1989), but the terms are common currency). The distinction can be filled out as follows: Bundle theories hold that objects are just bundles of properties. Substance-attribute theories on the other hand hold that there is some thing which 'has' the properties.

Returning to a tomato as an example: Associated with the tomato are a range of properties. Examples are, its greenness or redness, squishiness, its mass and its shape (at least when it is not being struck or squeezed). A bundle theory might hold that there is no more to the tomato than just the collection of properties. A substance-attribute theory would hold that there is something that has the properties.

We can, for the moment term this added ingredient a bare particular, though we shall see that this is perhaps slightly controversial. An ontology of bare particulars holds that there are two fundamental sorts of metaphysical elements

to the world. Properties are one sort of metaphysical element. The other sort of element in the world according to a bare particular theorist is the bare particular.

In relation to everyday objects then, we might raise the following question: is the position advanced in the previous section best considered a property bundle theory, or as a substance-attribute theory? No position will be taken here about which option would be best for a general theory of property instantiation. It will, however, be suggested in what follows that when our concern is with property instantiation by everyday objects some aspects of the role of the bare-particular or substratum can be taken over by the notion of an arrangement structure that was introduced in Chapter One. It will not be suggested that this is a general account of property instantiation.

There are three main reasons why one might posit bare particulars. One is as a solution to the coordination problem alluded to in the previous section. The problem, that is, of accounting for why properties coordinate in the way they do. Why if you squeeze a tennis ball does its colour and the distribution of its mass follow the change in its shape? Another depends on the assumption that properties cannot be ontologically independent, and so require an ontological base to be posited for them. These reasons will both be discussed below. The canonical reason for positing bare particulars, however, is as a response to what can be termed 'the problem of difference'.

The problem of difference[56] arises from the notion that properties must be universals. The primary role of universals on such a conception is to provide the explanatory basis for causal similarity in our environment. Universals are repeatable in the sense that they can be wholly in more than one place at a time.

According to the universals theorist when two objects share a property there is, literally, something that they have in common; they have in common the

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[56] See (Allaire 1963) and (Armstrong 1989) p. 64

universal that is that property. Thus, two balls that are the same weight, say 30 grams at sea level, can be said both to instantiate the property of having a mass of 30 grams. Those who posit universals will say that there is literally something that they have in common. They literally have in common the universal of having a mass of 30g.

The problem of difference arises when two objects have exactly the same properties. Consider two objects, a and b, with exactly the same sparse properties, F, G, and H. According to one sort of universals theorist, the correct account of this is as follows: there are universals corresponding to F, G and H and these are instantiated by a and b. (What instantiation comes to here is somewhat problematic as it cannot be a relation—such theorists hold that relations are also universals and so this would involve us in a regress when we tried to explain what it is for something to have the instantiation relation to the instantiation relation). Since universals are able to be wholly in more than one place, these universals F, G and H are wholly wherever a and b are. Since both a and b are qualitatively identical they are made up of identical universals. The problem of difference can be expressed in terms of the following question: Why should we suppose that a and b are two objects with the same properties, rather than the same object in two different places?

One natural response to this is to suggest that *a* and *b* are individuated merely by being in different places. The idea being that their position in space is itself an individuating factor. There are three things to note about this response, however. One is that it accepts the point that the problem of difference is supposed to raise, which is that if universals are posited then some means of distinguishing objects is required. It just says that spatial location is the means. The second thing to note is that it might be supposed that spatial location is an extrinsic rather than an intrinsic property of most objects and that it is slightly odd to utilise an extrinsic property as the main individuator of objects. Thirdly and finally, we might still think that the universe envisaged by Max Black is

conceivable (Black, 1952). We might imagine a universe consisting of just two balls, *a* and *b*, where F, G and H, are the properties of extension, mass and solidity for the two balls and nothing else exists. In such a universe the spatial relations between *a* and *b* would be symmetrical, and so would not serve to differentiate *a* from *b*. We should conclude then that spatial location will be insufficient to play the individuating role for objects.

Positing particulars that instantiate universals and are distinct from all other particulars would solve the problem of difference. Positing such particulars, for instance, would enable us to distinguish *a* and *b*, even in Max Black's world where the only objects are qualitatively identical.

Universals then are posited to account for the problem of sameness; to account for how objects can have properties in common. Bare particulars are posited to account for the problem of difference; to account for how objects that are 'made up' of the same properties can be distinct objects. The argument for them is just that they are necessary in order to differentiate objects from each other[57].

An alternative way to approach the problem of difference is to treat properties not as universals but rather as 'tropes'. The trope theory of properties was introduced earlier in relation to the alphabetic conception of parts. Tropes are not repeatable in the same way as universals, and so do not raise the problem of difference. They are, in fact, themselves individuals. On a trope theory what makes it the case that two objects have the 'same' property is that those objects are exactly similar in some respect, where that respect is a property. Tropes then can be classed in terms of resemblance.

To give a full account either of trope theory or of universals theory would fall well outside of the scope of this thesis. The best exposition of universals theory is still that presented by Armstrong in (Armstrong 1978a), (Armstrong 1978b)

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[57] See for instance (Armstrong 1989)

and (Armstrong 1989), with further reasons for positing something in the property role being provided in (Lewis 1983a). Trope theories have been defended by Donald Williams (Williams 1953), Bacon (Bacon 1995), G.F. Stout (Moore, Stout and Dawes-Hicks 1923), Keith Campbell (Campbell 1990) and Simons (Simons 1994).

It will be suggested here that in so far as a theory of properties and property instantiation is required for everyday objects the properties should be conceived of as tropes, rather than as universals. In the next section we will discuss Locke's account of substratum, and it will be noted that in so far as Locke had a theory of qualities it will do no harm to treat those qualities as tropes. (There is, in any case, an element of idealisation in the way that this chapter relates contemporary sparse theories of properties to Lockian qualities). Even positing tropes however, one might think that there is still a need to posit some sort of bare particular or substratum to fulfil the other roles that were mentioned earlier.

The coordination problem, it will be recalled, is the problem of why some properties seem to coordinate in the right way to form objects. Why is it that the mass of a proton and its positive charge stick together in a coordinated way? Why does the greenness of a tennis ball never seem to come away from the extension of a tennis ball? The simplest answer to this sort of question is that the properties coordinate in these sorts of way because they belong to the same objects. One way (amongst others) of explaining that is in terms of there being a bare particular that is effective in coordinating the properties. Quite how this is supposed to work is not always entirely obvious, but it makes sense that if there is an ontological posit that is responsible for the instances of a property being instances of the same thing, then that posit would also be implicated in the property instances coordinating in the requisite way. For now, we will merely note that there is a need for something to account for coordination without commenting further on the suitability of the bare particular for performing this role.

The final role to be discussed will be the role of 'that which underlies'. Locke can be read as supposing that property instances are not ontologically independent but rather depend on a substratum[58], and one could still feel drawn to this position. Just what it is that properties' instances are supposed to be ontologically dependent upon is not always very clear. Locke in particular seemed very unhappy with the notion of a substrata that supplies the ontological underpinnings for properties, whilst still feeling the need to posit it.

The idea that properties need an object to instantiate them makes intuitive sense. It is difficult to see how properties such as mass or extension could be free floating without an object that they are the mass or extension of. Bundle theories, however, tend to take the bundling relationship as a basis for ontological independence. The idea is that a bunch of properties that cannot exist independently can exist when bundled together. There is a general issue with how the bundling relation works—the issue being that it cannot actually be a relation. We will follow Russell in terming this non-relational tie 'compresence'. The idea then is that when some properties are bundled they can jointly form an ontologically self-sufficient unit, with the bundling taking the form of a 'non-relational tie'. The thought is that while properties might be incapable by themselves of being ontologically independent, groups of them may be ontologically co-dependent, and thereby ontologically independent when taken together. Simons (Simons 1994) argues for a two stage bundling of tropes. Thus, an object may be constituted by an interdependent central core of tropes which are such that each depends on all the others for their existence, plus a collection of tropes that are not foundational in the same way. This allows for a bundle theory whereby objects may have both essential and non-essential properties.

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[58] See (Bennett 1987).

It is not in any case quite clear how much is gained by positing substrata in the role of the ontologically independent base for properties which would not otherwise be ontologically independent. The problem is that positing substrata in this role seems to commit one to the invidious sort of bare particular that was famously criticised by Elizabeth Anscombe (Anscombe 1964): a sort of object that does not have properties of its own but yet is supposed to be the instantiator of properties for some object.

Philosophers such as Edwin Allaire and Gustav Bergmann who have endorsed a two category ontology consisting of bare-particulars and properties have not taken the bare-particulars to themselves be objects. Objects, even on the account of those who endorse bare-particulars are the combination of a bare-particular with the properties that it instantiates. The bare particular then, is not supposed to be a property-less self-supporting entity. It is something that occurs in the presence of properties. This is why Armstrong (see for instance (Armstrong 1989) p. 95) moves from the notion of a bare particular to a thin particular. The thin particular is not something that exists independently of the properties of an object, but rather something that is manifest in the instantiation of the properties[59].

One issue with bare particulars, which is noteworthy because it dramatises the commitments of sortalists, can be described in terms of the problems with counting objects. Bare particulars considered as ontologically independent would be both ontologically fundamental and determining of particularity. This means that any question about the number of entities there are in a given context should be answered by reference to the number of bare-particulars involved. This presents two related issues. Sortalist philosophers will reject the notion that we can count things without stipulating what sort of things we are counting. Thus if we ask how many things there are in my room, we need to be

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[59] For discussion of what sort of acquaintance we could have with a bare particular see (Clatterbaugh 1965) and (Allaire 1965).

clear whether we are counting medium sized everyday objects, molecules, atoms, teapots or what. Bare particularist theories require that what there is should be countable without reference to the sorts of things that they are: The number of things in the room is the same as the number of bare particulars, and a bare particular is a basic ontological category.

This demand for countability that is independent of sortal category is one with which Organicists would probably be sympathetic. Van Inwagen, for instance, takes 'exists' to be equivalent to 'there is at least one of' (van Inwagen 1998). He also argues (contra Wittgenstein and Putnam) that there is a correct answer to the question 'how many things are there' (van Inwagen 2002). This, taken with his actual ontology is consistent with a sortalism which only acknowledges two sortals— 'mereological simple' and 'living thing'.

The more normally noted problem with bare particulars turns on the difference between 'having' properties and 'bearing' properties. If the point of a bare particular is just to be the 'instantiator' of properties, then this seems to suggest that it itself has no properties. We might, however, distinguish the 'bearing' relation that such an individual has to the properties it instantiates from the 'having'. This would allow that bare particulars themselves could have certain formal properties such as being the sorts of things that are bearers of empirical properties.

A more fundamental objection that one might have to bare particulars as the ontologically independent element of substances is that one seems committed to the notion that there could be bare particulars that do not at some given time in fact instantiate any properties. Thus, we would have un-located entities floating around the universe, presumably waiting to be recycled the next time something that does have properties is brought into existence. Since such a bare particular could be neither created nor destroyed (at least not through any causal process), we would have to accept that there have always been the same number of things in the universe, that that number cannot change, and that that number is

fundamentally unknowable to us. There seems good reason to reject this sort of position, and little enough reason to accept it.

If though we reject this invidious notion of a bare particular and replace it with something like Armstrong's 'thin but clothed' ((Armstrong 1989) p. 95) particular, then we are essentially saying that bare (or thin) particulars exist only when there are properties that they instantiate. But then it seems that the particular is as dependent for its existence on the properties that it instantiates as those properties are on the particular. If this is the case then we seem to gain little in the way of ontological independence by positing bare particulars to play the role of substrata.

We identified then three metaphysical roles that could constitute a reason for positing bare particulars. Bare particulars could be posited as individuators, to help with the coordination problem, and as what 'underlies'. It has been argued in the forgoing that the need to posit them as individuators is less pressing if we endorse a trope theory of properties, and that it is not clear what they really contribute as ontologically independent entities that underlie. This leaves the coordination problem, the problem of how to explain why properties coordinate appropriately[60].

The next section features a brief discussion of Locke's notion of substance, which it will be noted has clear parallels to the position presented here. It will be noted that there is a reconstruction of Locke that can be attributed to J.L. Mackie whereby the primary role of substrata is as a solution to the coordination problem for everyday objects. It will be suggested that we could utilise the notion of an arrangement structure as a place holder for what fulfils this role for everyday objects.

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[60] We encountered a version of this problem in the last chapter see

While this is neat, however, it does not entail a commitment to a substance-attribute ontology. It can still be maintained that we do not need to posit any distinct ontological category of thing to account for objects: we do not need to posit two categories of entity to account for the particularity, ontological independence and coordination of properties that we find in everyday objects. That said, there is nothing in what has been said that rules out a substance-attribute account of property instantiation generally. The focus here is on everyday objects.

We will see then that far from being a novel theory of objects, the foundations of the position presented here can be found in Locke and in a scientifically informed empiricist account of objects which runs through to the present day.

3.2   Locke's substance-attribute theory

Locke offers a substance-attribute account of properties and objects. Parts of the following are quoted or referenced from Locke in support of this reading[61]:

> 'The Mind being, as I have declared, furnished with a great number of the simple Ideas, conveyed in by the Senses, as they are found in exteriour things, or by reflection on its own Operation, takes notice also, that a certain number of these simple Ideas go constantly together; which being presumed to belong to one thing, and Words being suited to common apprehensions, and made us of for quick dispatch are called so united in one subject, by one name; which by inadvertency we are apt afterward to talk of and consider as one simple Idea, which indeed is a complication of many Ideas together: Because, as I have said, not imagining how these simple Ideas can subsist by themselves, we accustom our selves, to suppose some substratum, wherein they do subsist, and from which they do result, which therefore we call Substance.'
> ((Locke 1689) Book II, Chapter xxiii, 1)

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[61] See for instance (Bennett 1972), (Bolton 1976), and (Mackie 1976).

We should conclude from this paragraph that Locke's attitude toward substance is ambivalent at best. He notes that we do in fact act and think as if there were such things as 'substances', but seems to think that substance is in some sense out of reach, not itself being something that can be experienced. Given his epistemology, this last point is an issue for him.

This is further emphasised in the paragraph immediately following:

> 'So that if any one will examine himself concerning his *Notion of pure Substance in general*, he will find he has no other *Idea* of it at all, but only a Supposition of he knows not what support of such Qualities, which are capable of producing simple *Ideas* in us…. If any one should be asked, what is the subject wherein Colour or Weight inheres, he would have nothing to say, but the solid extended parts; And if he were demanded, what is it, that that solidity and Extension inhere in, he would not be in a much better case, than the *Indian* before mentioned; who, saying that the World was supported by a great Elephant, was asked, what the Elephant rested on; to which his answer was, a great Tortoise: But being again pressed to know what gave support to the broad-back'd Tortoise, replied, something, he knew not what.'
> ((Locke 1689) Book II, Chapter xxiii, 2)

One element of the intent of this section in the *Essay* that does not seem to be noted very often is the parallel that Locke draws between mental and physical substances; the point being that we have no more knowledge of one than we do the other. Our positing of either is drawn from the notion that there must be something underlying the properties that are collected together. This seems to be in effect a stakes raising exercise: if one intends to reject physical substance, one must reject mental substance for the same reason.

The picture of substance that we find in Locke can be seen to follow, at least in part, from his account of where ideas come from. Locke holds that we have

simple ideas and that these derive from two sources[62]: sensible qualities (which for the most part are found in objects) and reflection on the operations of the mind. What Locke terms 'sensible qualities' of objects can be considered analogous to what are now termed 'sparse' properties. That is, the intrinsic causal powers of a thing rather than any of the other 'abundant' properties that may be predicated of it. Thus a tomato, might weigh 45g, and be red, but it is also saleable and edible, and these last two might not be thought to be causal properties of the tomato itself.

While we can see that Locke is unhappy with the notion of substratum, and in particular the difficulty we have in saying anything about it or experiencing it, it is a central part of his notion of substances. 'Substance' is introduced by Locke as a complex idea in contradistinction to the other sorts of complex idea, which he takes to be 'modes' and 'relations'. The difference between a mode and a substance on this account (see (Locke 1689) Book II, Chapter XII, 3-6) is that substances are able to subsist by themselves. Thus: '…The *Ideas* of *Substances* are such combinations of simple *Ideas*, as are taken to represent distinct particular things subsisting by themselves…' (*Essay* Book II, Chapter XII, 6).

Brandt Bolton (Bolton 1976) notes in passing that one of Locke's initial examples of substances is 'lead' and argues that this rules out substances as analogues to Aristotelian substances—or concrete particulars. This does not seem altogether convincing, as the idea of 'lead' could just as well be the idea of which sparse properties all pieces of lead have in common, and Locke could be taken to be writing loosely. It does, however, highlight a variation in the way that the term 'substance' is used that is worth noting early.

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[62] See (Locke 1689) Bk II, chapt. I.

The term 'substance' is sometimes used to pick out everyday objects such as tables and chairs and the like. It might be extended to pick out any concrete particular, so including microscopic objects such as molecules and atoms. In this usage it picks out individuals 'with being', that is (for our purposes), existent individuals. It can be thought of as Aristotelian in contradistinction from, for instance, a notion of substance as a more fundamental ontological category such as Descartes'. Aristotle's discussion of substance is multifaceted. The notion is Aristotelian in so far as it extends to roughly those things which Aristotle thought of as substances (not necessarily in terms of the metaphysics that he attributes to the term). Aristotle took organisms to be exemplars of substances, but thought that there were other everyday objects that also counted. Since on this sort of notion substance is tied to both individuality and to existence we can, when using this sense of the word 'substance' put the claim of the Organicist as follows: There are no non-living substances except for mereological simples.

Another very common use of the term 'substance' however picks out not so much individual objects as the stuff they are made of. Thus gold is a substance in this sense, whereas a piece of gold, or a statue made of gold is a substance in the Aristotelian sense. It is this sense of the word substance that we can take chemists to be using when they discuss, for instance, the atomic number of some material or other. We can term these sorts of substances 'material substances'. Very roughly, if we were inclined to hylomorphism, we might think that one gets an Aristotelian substance when one combines a material substance with a 'form', where 'form' is understood as an organising principle rather than in the way outlined in the Chapter Two.

One way of reading Locke's discussion in (Locke 1689) Book II, Chapter xxiii is as trying to give an account of the instantiation of sparse properties by substances, where other modes are reducible in some way to substances. Substratum on such a view is needed to account for substances' ability to subsist without any further support, and, one presumes, to account for the coordination

of their properties. On such a view it is substratum that differentiates the idea of substance from other complex ideas.

We can read the first of the quotes from Locke given above as introducing both the coordination problem and the subsistence role for substratum. The argument for a substratum as 'underlying' properties seems to require something like the following reasoning, though it will be noted that Locke is worried enough about the notion of a substratum to put this reasoning in quite tentative terms:

1. We encounter properties in the world around us
2. Properties cannot subsist by themselves
3. There must be some 'other thing' upon which properties are dependent for their subsistence

Locke writes that we are led to the conclusion (3), because we 'cannot imagine how' properties can exist by themselves[63].

We noted earlier reasons to doubt the second premise of this argument, and in particular the usefulness of positing a substratum in order to ensure ontological independence. Locke's worry appears to be to do with the need for substances to be ontologically independent, where this is taken to mean that they do not depend on anything else for their existence. Here we can see, however, why Locke discusses the coordination and subsistence problems together:

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[63] Berkeley is critical of the view of substance as what underlies and binds together bundles of ideas ((Berkeley 1710) §§ 16-17 and 77). I however find myself in agreement with Mackie on this: Locke's text 'not imagining how these simple Ideas can subsist by themselves' should not be read as concerning ideas but as concerning the properties that give rise to simple ideas (see (Mackie 1976)). In introducing the notion of a simple idea in ((Locke 1689) Bk II, Ch. VIII, § 8) Locke notes that he occasionally in the text will use the term 'idea' where what he is actually talking about is a 'quality'.

Coordination can be explained on the assumption that the properties belong to the same substance, but substances are supposed to be ontologically independent and properties themselves seem to depend on the substance they belong to for their existence.

It was argued above that positing a substratum as a sort of entity which underlies objects and supplies their ontological independence is not very successful: there is no reason to suppose that bundles of properties may not supply their own ontological ground, and it is not at all clear once we have posited a substratum why we should suppose that its properties should depend ontologically on the substratum rather than the other way around. The significant thing to note for our purposes is that we (or at least Locke) might take a different attitude in respect of the need for substratum at the level of subatomic particles to the attitude we take concerning the need to posit one for everyday objects.

The focus of this thesis is everyday objects—those everyday continuants that we encounter around us everyday. For Locke, everyday objects are one of the sources of the simple ideas which are the basis of experience, and hence our understanding of the world (the other source of simple ideas being reflection). Although Locke followed Boyle in thinking that objects are made up of smaller parts, he also seems to have thought that this internal structure of objects was occult in the sense of being unknowable[64]. His comments about substances and objects then, can be taken as comments about everyday objects, and his comments about properties can be read as comments about macroscopic properties or about the sorts of properties of objects that can be seen with an optical microscope. In this respect Locke is somewhat different from contemporary writers. Writers such as Armstrong and Simons who advocate realist accounts of properties (though universals and trope accounts) take as example properties things such as the mass and charge of electrons and protons

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[64] See (Locke 1689), Bk IV, Ch. III, § 16.

as well as properties of larger objects. This is not to say that they deny that there are macroscopic properties (Simons is explicit that he does not, see (Simons 1994)), but current theorising about properties must be seen in the context of the atomic theory of matter as developed by Dalton, Rutherford and others, as well as the complications that quantum theory has thrown up for it.

Mackie ((Mackie 1976) p. 82) suggests that in reconstructing what Locke should have said (leaving aside what he actually did say as a different issue) we could suppose that his discussion of substrata really applies to macroscopic objects. What Mackie suggests Locke should say about this is as follows:

> 'There are particular substances, such as a horse, gold (or a piece of gold), and so on, each of which is constituted not only by a combination of easily detectable instantiated properties that go around together but also by many accompanying powers, and also by an internal constitution which holds these properties together and is their source and the basis of those powers. This internal constitution is mostly unknown, but is reasonably postulated.' p. 82

The suggestion then is that we (charitably) read Locke as positing substrata in order to solve the coordination problem for properties of macroscopic objects. Mackie is suggesting that we take 'substrata' in this instance to pick out whatever elements of the internal structure of objects do in fact account for their macroscopic properties. There is then a clear parallel between 'substrata' in this sense and the notion of an efficacious substructure that was introduced in Chapter Two of this thesis. The notion of an arrangement structure (and in particular its efficacious sub-structure) introduced there could, one might think, stand in the place of the 'substratum' that Locke, on this reshaping of his view, sought. To see this, consider that it is the (efficacious) arrangement sub-structure which is causally responsible for the properties of macroscopic objects in the account given.

Object forms, it will be recalled, are the collections of macroscopic properties that we attribute to objects. There is a fairly clear analogy to be drawn then to Locke's view. Locke takes the idea of a substance to be a complex idea generated by collecting together a number of our simple ideas of sensible qualities and joining them together with the notion of a 'substratum' which is explanatory of both how those ideas coordinate and of how they are generated in the world. Because simple ideas are supposed to be the result of qualities in the world (leaving aside for now the distinction between primary and secondary qualities); we can infer that Locke really is positing sensible qualities in the world and some unknowable organising principle to coordinate them. The notion of an object form then looks very much like the collection of properties that Locke thinks give rise to the complex idea of an object, and the structure could go some way to stand in the place of the substratum.

What this brings out clearly is which way the direction of inference should go in determining the ontology of everyday objects. What goes on at the atomic and sub-atomic level is much better understood than it was in Locke's time, but the advent of quantum theory still makes what goes on at that level somewhat mysterious. What we can remain sure of is (contra the Organicist) that there are macroscopic objects, that they have macroscopic properties that roughly match those that we attribute to them, and that they have an internal structure (an efficacious substructure) which is causally responsible for these properties.

Care must be taken when considering macroscopic properties. Chapter Two introduced a number of related notions with respect to objects. The object form of some object was supposed to be the collection of properties of that object, and we argued that in most cases the object form would in fact also be an arrangement form. That is, we argued that the properties belonging to an object would also (in most cases) be those that are generated by a causally efficacious sub-structure of an object-arrangement. Little was said about the nature of the properties that we take to make up an object form.

The properties that we associate with everyday objects, and in particular those by which we distinguish them from other objects and determine 'what they are', might be thought to be less causally explanatory than sparse properties are really supposed to be. Sparse properties as introduced by Armstrong are supposed to be those that are discovered (or discoverable) by science. Lewis (Lewis 1983a) introduces sparse properties as 'natural properties' as a necessary addition to what was previously his account of properties as sets of objects across possible worlds. His earlier position allows for many more properties than we even have predicates for, meaning that in the new position we have in effect three groupings of different sorts of property: all the properties there are (i.e. every possible set of possible entities), those properties which we pick out using those predicates that we actually use, and properties which are causally explanatory. Lewis allows that causal explanatoriness is not a clear concept and suggests that properties may be more or less natural as they are more or less necessary for causal/scientific explanation. Sparse properties are described by Lewis as those that could 'comprise a minimal base for describing the world completely' ((Lewis 1983a) p. 183), though he notes that this is a simplification and that Armstrong allows for conjunctive universals.

The positive account of objects being presented in this thesis has two main elements. The first is a notion of objects as being constituted by bundles of properties in our environment. The second is the claim that these bundles of properties can be taken to be those things which satisfy our object concepts. This account is what allows it to be claimed that if the everyday object things get done, then there are everyday objects.

This chapter argues that the first of these claims does not entail a general view about property instantiation. The focus has, rather, been on the way that the view of everyday objects as constituted by property bundles can be made sense of.

The view presented here is that property bundles constitute objects. Objects then, are, in a sense, property bundles. But the sense of 'are' in question is the sense of constitution rather than identity. It might be suggested that this means that the position is more similar to a substance-attribute theory than a bundle theory. The thought being that 'pure' bundle theories should treat objects as identical to bundles of properties. The bundle theorist should reject pressure to accept this for the same reason that one should reject the notion that an object is identical to its parts: an object is one thing, and its parts or properties (on this view at least) are a number of things. If one were to identify an object with its properties, it would have to be with *the collection* of its properties, or with the properties and the *non-relational tie* holding them together. This would require us to treat *the collection* of properties as distinct from the properties just as they are.

In so far as the account presented here does not identify the bundled properties with the object it can be taken to be analogous to a substance-attribute account. Someone adopting the account, however, is not committed to the sort of two category ontology that has been the mark of the substance-attribute account. The position is consistent with an ontology of tropes. It was argued in this chapter that there are three main reasons for adopting a substance-attribute model of objects. It was suggested that the problem of difference does not require a substance as a solution if one adopts an ontology of tropes rather than universals. We saw that positing substrata does little to help with the problem of ontological independence. Finally it was suggested that in the case of everyday objects, to the extent that we need an explanation of the coordination of properties, this can be found in the fact that for a given object they are likely to be the causal products of the same arrangement structure.

3.3   Bundle theories and sortal theories

We have then three separate stories (in addition to the Organicists') that we can tell about everyday objects. Two of these stories concern the constitution of objects and are what were above called 'property cluster accounts'. On the

bundle theory, everyday macroscopic objects are constituted by (though one need not thereby conclude that they are identical to) bundles of properties. On the substance-attribute view objects are bundles of properties together with an entity of a different category that is responsible for the bundling of the properties. To these two positions we can add a position suggested by the account of sortal concepts discussed in Chapter Two (section 2.2).

'Sortalism' may be taken as having the following two components:

1. the view that reference to objects can only be established under a sortal concept.
2. The view that identity is governed by the principle of the indiscernibility of identicals: that if a=b then any property that a has at a time is also a property of b at that time (i.e. if a=b then Fa iff Fb).

Sortalism, as developed by Wiggins, is not equivalent to a sortal relativism; the idea is not that identity is sortal-relative in the sense that what is true of some single object depends upon what sortal concept is applied to it. It is not that the same thing has the persistence conditions of either clay or a statue depending on how we think of it.

Sortalism then, is a position concerning our concepts of objects, but is closely related to a position with respect to the metaphysics of objects. Sortalism fits fairly naturally with a view of objects that treats them as substances which have some properties essentially. By identifying something under a sortal concept we also establish the conditions under which that thing will cease to exist. Sortal concepts then, must latch on to real things in the world if we are to accept this view and also suppose that what exists is not at root a matter of which concepts we have.

It makes the most sense to associate sortalism with some sort of essentialism about objects. That is, with the view that objects are such that they have some

of their properties necessarily[65]. If some property F were a necessary property of an object *a*, then whenever *a* exists it instantiates F. If it were to stop instantiating F it would cease to exist. Sortal concepts, taking in as they do the persistence conditions of an object, must cover also those properties which if they fail to have them would entail the non-existence of the object. Essentialism and sortalism are, then, natural bedfellows. We might ask however how sortalism and essentialism might fit with a bundle theory, or with a substance attribute-theory.

There seems no inconsistency between thinking about objects as substances with properties on the one hand and the supposition that some of those properties must be had essentially by the object on the other. That is, we can see essentialism as consistent with the idea that an object is a cluster of properties.

While the letter of the two positions may be largely consistent, however, there is perhaps a difference in the spirit of the two accounts. The sortalism propounded by Wiggins treats objects as a category in their own right. Our tracking of objects through the course of their existence is the tracking of substances that are in themselves of a kind, and that is quite a different way of looking at them to that adopted by people who argue in favour of property cluster accounts.

The question Wiggins is asking is fundamentally about objects understood as we interact with them. His account is of the substances around us that we interact with and how we trace them through our environment. The question is: We have this object, when is it the same object as that one? We can compare Wiggins' concern in *Sameness and Substance Revisited* (Wiggins 2001) with Russell's starting point in *The Problems of Philosophy* (Russell 1912). We find the issues that each writer is concerned with quite different. Russell is less concerned with the

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[65] Though Kit Fine (Fine 1994) has argued for a more nuanced version of essence whereby a thing's essential properties are not those which are its necessary properties, but rather those that make it the thing that it is.

questions of the identity, identification and survival of everyday objects then with the relationship between the appearances of such objects and whatever the source of those appearances is.

One possible source of tension between property-cluster theories and sortalism may also raise issues for the account presented in this thesis. The remainder of this chapter discusses the issue in question.

Wiggins holds that, for some object *a*, if it is the case that there is an object *b* such that *a*=*b*, then there must be some sortal concept F, which they both fall under, such that *a* is the same F as *b*. The tension between the Sortalist account and cluster-property accounts arises from the fact that the properties which determine what sortal some individual falls under might be relational.

This is easily demonstrated with the now common example of the statue and its clay. We may suppose that a certain statue, which we can call 'Statue' is made of a certain lump of clay, which we will now term 'Clay'. We may presume that Clay existed before Statue, as this would need to be the case for Statue to be made of Clay. Statue comes into being once Clay is moulded into the statue shape. On the other hand we can see that it is at least possible for Clay to outlast Statue. While Clay is statue shaped both Clay and Statue exist, but if Clay were to be flattened then arguably Clay would continue to exist but Statue would cease to exist.

Supposing that statue is created at time t1, and destroyed at time t2 this generates a problem which can be understood in terms of the incompatibility of the following three claims:

1)   Statue = Clay

2)   Clay exists before t1 and after t2, and Statue does not exist before t1 and after t2

3)   It is impossible for something to both exist before t1 and after t2 and not exist before t1 and after t2

There is a well-developed literature on this particular problem[66]. Sortalists are generally clear that the option to be rejected should be 1). They are, that is to say, clear that objects are not identical with the matter which constitutes them. In this case, what distinguishes Statue from Clay can be put down to a number of relational properties. Plausible candidates include, being created for the purpose of being a piece of art, being a representation of something, depicting something, and being designated an artwork by the art world (see for instance (Dickie 1974), though he probably would not draw the ontological conclusion).

It was noted in the section on object concepts (Section 2.2 above) that the sortalist takes identifying an object to involve identifying the sortal concept that it falls under. This requires that one be able to answer the question 'what is it?' for the thing being so identified. There are a number of sorts of thing such that establishing what sort of thing they are involves identifying relevant relational properties. Being a statue, for instance, involves being created in a certain way, for a certain purpose. If Statue were a natural formation in a cave on Mars that at no point in its history was observed by a living creature, one would have to say that Statue was not a statue.

At the extreme end of these sorts of position, the answer to the 'what is it?' question might be determined by the social function of the thing in question. To sharpen the point we might consider the example of an object with the exact physical constitution of a board rubber. In our society it is used exclusively as a board rubber. If one were to ask someone in our society what the object is, the

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[66] E.g. (Gibbard 1975), (Burke 1994), (Rea 1995), (Baker 1997).

response would be a 'board rubber'. One can imagine, however, a society very similar to ours where things of the very same design are used exclusively as classroom missiles for the disciplining (or possibly awakening) of recalcitrant pupils. In such a society, the object would be identified as a 'classroom missile'. The essentialist will be inclined to say that in a world with both societies there are two objects that share the same material constitution; the classroom missile and the board rubber[67].

The properties involved in cluster accounts of objects however are not the sort of socially determined relational properties that might be thought to determine the identity of things in this sort of case. The properties involved in cluster accounts of objects are supposed to be sparse properties— which is to say the sorts of intrinsic properties that fall within the domain of science. This means that it is very likely that the identity conditions associated with objects construed as property clusters will not be the same as those associated with those objects identified by the sortalist or essentialist. There are likely to be a much wider range of objects acknowledged by the essentialist than by the cluster theorist.

It was also noted earlier that on pain of begging the question against the Organicist, we cannot presuppose a sortalist account of object concepts.

What we should conclude from the forgoing is that the relationship between object-concepts and object forms is likely to be a complicated one. We do, as a matter of fact interact with the objects around us in ways that are highly influenced by the culture(s) which we in fact participate in.

Tilley in (Tilley 2002) explores the central ceremonial place that canoes have in the society of the tribes-people of Wala Island, just off the coast of Vanuatu. The significance of a Wala canoe prow to us will be quite different to the significance it has to the Wala, who have rituals associated with its production

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[67] This was Fine's position when I suggested the example in conversation in 1998.

and attribute particular symbolic significance to the design, perhaps to the extent that a sortal-essentialist would construe the Wala as interacting with objects that we cannot. Similarly, the significance of the mace in the House of Commons, or the Queen's throne, might be somewhat lost on a Wala.

On a more general level, it is quite likely that cases will occur, such as that of the statue and the clay, where different object concepts will be associated with same object forms. Whether or not we should conclude on this basis that there is more than one object instantiated is not something that needs to be determined at this stage.

Chapter Four: The O-arranging Manoeuvre

So far a number of challenges to the Organicist have been presented. In the first chapter, it was suggested that Organicists' conception of 'composition' is too anaemic to support the theoretical weight that Organicists place on it. In particular, it was argued that it does not provide the resources necessary to deny a claim that everyday objects are, far from non-existent, in fact simple. This line, while consistent with Organicists' principled claim that the only things that exist are mereologically simples and living things, clearly leaves them with an ontology quite different from the one they suppose themselves to have. It would require them to abandon their negative ontological claim—the claim that there are no everyday objects.

In the second and third chapters a positive position was presented in which we see the objects in our environment as bundles of properties (which we termed 'forms') arising from the existence of an arrangement structure. The challenge this account presents for the Organicist is as follows: if our object concepts are satisfied, what more is required for the existence of objects? The Organicists' stock answer to this is 'composition'—but we have already argued that their notion of composition cannot by itself establish whether or not there are everyday objects.

In this chapter, we see that the use Organicists make of the O-arranging manoeuvre commits them to two things that (it was claimed in Chapter Two) are sufficient for the existence of objects. That is, it commits them to there being forms and to those forms satisfying our object concepts. The following

chapter will strengthen this point by focusing on how the Organicists account for our object speech and thought in the light of their denial of the existence of everyday objects.

The current chapter is structured as follows. The first section describes the way that the O-arranging manoeuvre is formulated; we see that both Merricks and van Inwagen require our actual scheme of object concepts in order to make sense of the idea of object-wise arrangements of simples. The second section discusses the rhetorical use to which they put the manoeuvre. It is argued that the O-arranging manoeuvre is in fact essential to making their position even remotely plausible. In the final section of the chapter we note that part of the role of the O-arranging manoeuvre is to explain the existence of what were earlier termed 'forms' in our environment. Thus, it seems that by deploying the O-arranging manoeuvre Organicists have committed themselves to the obtaining of the conditions that (it was argued in Chapter Two) are sufficient for the existence of objects. That is, once we accept the O-arranging manoeuvre we have allowed that there are regularities in our environment that satisfy our object concepts.

4.1   What is an O-wise arrangement?

We have already come across the O-arranging manoeuvre on a number of occasions and by now the idea should be quite familiar. Since the manoeuvre is partly a rhetorical move, it can be well illustrated with a dialogue between an Organicist (O) and someone he meets on the Clapham Omnibus (WCO):

> O: There are no everyday objects.
>
> WCO: That's crazy. Of course there are objects—I'm sitting on one—it's called a 'chair'. Last month I went skiing on one—it was called a 'mountain'. If there were no objects I'd fall to the ground, and I wouldn't have been able to go skiing.

O: You're so naïve! What you take to be a chair is in fact nothing more than a collection of mereological atoms arranged 'chairwise', and what you skied down last month was not a mountain but a collection of simples arranged 'mountain-wise'.

The manoeuvre can be articulated schematically: Wherever there is apparent reference in our language to some non-living everyday object O, we are to suppose that we can replace it with discussion of the activities of 'some simples' arranged O-wise. Instead of a teapot, we have a teapot-wise arrangement and so on. We have so far allowed that this sort of manoeuvre makes sense, but there are, none the less, worries about how it is to be formulated. In particular, one might be concerned about how it is that we are able to recognise object-wise arrangements of simples in our environment. In this section we address the question, what is an object-wise arrangement? We will see that Merricks and van Inwagen differ in the way that they formulate the notion of an object-wise arrangement. What both formulations have in common, however, is the way that they depend upon our object concepts.

So what is an object-wise arrangement? Both Merricks and van Inwagen fill out the notion in terms of an example. The implication is that we should be able to schematically apply the same procedure by which they generate their examples to any (virtual) objects that we come across. It will repay our effort to look at what they say about their examples in some detail. Doing so, will help clarify where the Organicist position differs from that offered in this thesis, but also how the O-arranging manoeuvre is supposed to work and what relationship Merricks and van Inwagen suppose object-wise arrangements to stand in to our object concepts.

Van Inwagen's example is a chair-wise arrangement. Van Inwagen describes a chair-wise arrangement as what is in a 'chair receptacle', where chair receptacles are regions of space that:

'… according to those who believe in the existence of chairs are occupied by chairs' (van Inwagen 1990) p. 105[68].

Van Inwagen 'concedes' the following about a chair receptacle:

(A)   'The chair-receptacle [R] is filled with rigidly interlocking wood-particles; the regions immediately contiguous with R contain no wood-particles; the wood particles at the boundary of R (that is, the wood-particles within R that are not entirely surrounded by wood particles) are bonded to nearby wood-particles much more strongly than they are bonded to the non-wood particles immediately outside R; the strength of the mutual bonding of wood-particles within R is large in comparison with the forces produced by casual human muscular exertions.' (van Inwagen 1990) p. 105

He then denies:

'B)   There is something that fits into R
C)   There is something that the wood-particles within R compose'

And proceeds to make the following claims:

'Now if either (B) or (C) were true, there would be a chair. If either of them is false, then there are no chairs. (Or, at least, there is no chair in R).' (van Inwagen 1990) p. 105

Van Inwagen suggests that he differs from other philosophers in not supposing that B and C are entailed by A.

One thing that is immediately evident is that there is a straightforward way in which A is false. There are no 'wood particles' and so there cannot be any spaces occupied by them. Van Inwagen grants that the notion of a 'wood

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[68] Granting that this way of characterising a chair-receptacle makes sense, it would still need some development: Some spaces that people who believe in chairs take to be occupied by chairs are in fact not occupied by chairs for reasons quite different to those put forward by van Inwagen.

particle' is an idealisation, but presumably holds that it is an innocent one. It is not clear, however, that he is correct in this regard. We have already seen that there are reasons to doubt whether the Organicists can really make sense of mereological simples, or if they can, that these simples need be microscopic. The idea that there might be simples that are wooden is misleading in that it suggests an atomism that allows for substance kinds at the sub-atomic level (where substance kind is to be understood in the sense of 'material substance' kind).

In fact, as we are taught in secondary school science lessons, different chemical elements are distinguished from each other by their atomic number. The atomic number of an element is itself determined by the bonding relation of sub-atomic particles (how many protons an atom of that particular kind has). The chemical properties of complex substances also involve the relations of sub-atomic particles. The atoms involved in a chair stand in a number of interesting relations to each other, and, to an extent, these are hierarchical: subatomic particles form atoms, atoms form molecules and molecules are chemically bonded in order to form 'wood'. If one thought that the way to find out about composition is to find objects, and then to investigate empirically the relations that hold between their parts, then these are precisely the sorts of relations that one might think to investigate. Glossing over them in order to discuss 'wood particles' subtly favours the idea that 'composition' is one sort of relation, and that we might best find out about it by *a priori* reasoning.

Leaving to one side any worries about the term 'wood-particles', as primarily rhetorical, we might briefly consider what would be involved in A's entailing B and C. What sort of entailment is there supposed to be here? The most natural way to read van Inwagen is as saying that most philosophers think that if A is true, then B and C must be true. That is, to take the sort of entailment involved as straightforward material implication, treating each of A, B and C as expressing propositions. It does seem likely that many philosophers who believe in everyday objects will hold all three propositions to be true (or some suitably

complicated variation that corrects for the notion of 'wood particles'). Certainly one could give up such an implication without allowing that there are no objects: one way, following the argument in Chapter One would be to allow that A and B are true but that C is false.

It is, however, misleading to gloss the issue at stake between those who believe in everyday objects and those who deny them in terms of this supposed implication. Recall that a chair-receptacle is, by hypothesis, a space that 'those who believe in the existence of chairs' believe to be 'occupied by a chair'. But if that is the case, then suggesting that those who believe in chairs think that B and C are entailed by A is like suggesting that they must believe that if there is a chair made of wood, then there must be a chair made of wood. To see what is going on here, reread A, but replace the words 'there is a chair receptacle', with the words 'There is a chair, and the space it fits in can be called R…'. B follows immediately by existential generalisation. That is, if one believes in chairs then one is likely to think, given R, that it is a fairly trivial entailment involved in determining the truth of B.

Similarly, those who believe in chairs generally suppose them to be composite objects. Thus, they would infer from the fact that there is a chair that occupies R that there is a composite object that occupies R. Once we start to see composition as a problematic relation, this inference becomes more problematic. But as was noted in Chapter One, once composition has been problematized we are still left with the option of just supposing that there is a chair in R, and rejecting the notion that it must be composite. The Organicist has put the notion of 'composition' under a level of pressure that it cannot sustain. This may seem a little trivial, but to suggest that those who believe in chairs infer B and C from A, only makes sense if they do not already (contra hypothesis) believe that R is occupied by an object. It is to assume already the conclusion that the O-arranging manoeuvre is supposed to secure for the Organicist. That is, the conclusion that the existence of everyday objects is not merely self-evident.

The thing that must be noted about van Inwagen's formulation of the O-arranging manoeuvre is its reliance on our everyday object concepts. In the sequel it will be argued that the way that Merricks formulates the manoeuvre in *Objects and Persons*[69] is just as reliant upon our object concepts. Object concepts on these accounts distinguish bits of our environment from other bits, and in most cases, the application of them is accepted as being quite unproblematic.

Merricks formulates the notion of an object-wise arrangement in terms, which, if his metaphysics is correct, would be impossible. He takes some simples to be arranged chair-wise in the following case (just the choice of example object has been changed, Merricks' account is of atoms arranged statuewise):

> M1:   'Atoms are *arranged chairwise* if and only if they both have the properties and also stand in the relations to microscopica upon which, if chairs existed, those atoms' *composing a chair* would non-trivially supervene.' (Merricks, 2001) p. 4

This is quite odd. The idea seems to be that in order to find out what a chair-wise arrangement is like we should apply something like the following four stage procedure:

> Stage 1:   Imagine a possible world W1 where there are chairs
>
> Stage 2:   Pick out a chair C
>
> Stage 3:   Have a look at the properties and 'relations to microscopica' that the atoms x composing C instantiate
>
> Stage 4:   Have a look around the actual world for some atoms y that supervene on the way that the atoms x would be (i.e. 'have the properties and stand in the relations to microscopica') in W1

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[69] There is at least one place where Merricks characterises object-wise arrangements in a way much more similar to van Inwagen's (Merricks 2000).

The reason that this is an odd way of characterising the notion of an O-wise arrangement is that if Merricks' Organicist position is correct, W1 is not a possible world. It is impossible. One assumes that the Organicists' claims are supposed to be necessary truths. Merricks' arguments, if they are sound, would seem to apply to any world which had a physics that was similar enough to the actual world for this procedure to make sense.

It will be argued below that the problem is that if we take Merricks at his word as to what is required for some things to compose another thing, it is not clear why we should think any chair which satisfied those conditions would have a microstructure at all like that of chairs in the actual world. Merricks' argument from over-determination will be discussed in detail in Chapter Six. For the present it will be sufficient to note that Merricks is committed to the following principle concerning composition:

> If some xs compose an O, then O has a property that is not caused by the cooperation of the xs.

Consider for instance, what he thinks would have to be the case for there to be a world where there are chairs. In such a world, there would have to be a property that chairs had that the chairwise arrangement of parts did not produce. Let us suppose that chairs in this world make a high-pitched scream[70]. But what sort of physics would a world have to have for this to be the case? The scream would need to be caused by the chair and not by its constituent simples, and it is difficult to imagine how this would come about. More importantly we might wonder why we should think that the microstructure of such a thing would be anything like that of a chair in our own world.

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[70] Merricks uses this example in (Merricks 2005). See also commentary on that article in (Barnes 2007) and (Merricks 2007).

Or let us suppose that the properties that chairs have in W1 are those macroscopic properties that we associate with a chair. Then at least we could make sense of an analogy between C and a chair (or what non-Organicists take to be a chair) in our world. The problem then is that applying Merricks' principle we have to conclude that the simples x are not causally responsible for those properties. If this is the case, of course, then either the simples in a chairwise arrangement would not supervene on the simples x and their properties and relations, or they would so supervene, but not be causally responsible for the macroscopic properties of the chair. If they are not responsible for the properties of the chair, then supervening properties in our world are unlikely to be a chairwise arrangement.

Merricks, of course, notes that chairs are as far as he is concerned, counter-possible and that this might be taken as an objection to his account of chairwise arrangement. He says that any metaphysician must be willing to talk about counter possible circumstances or they would not be able to critically examine the possibility that they were wrong when they made claims that they take to be necessary truths. He suggests that those who feel uncomfortable with this might prefer a fictionalist account whereby:

> 'atoms are arranged statuewise just in case, according to the 'folk-ontological fiction', they have properties and stand in microscopic relations upon which their composing a statue supervenes.' (Merricks, 2001) p. 5

The folk ontological fiction, of course, is based upon our normal object concepts.

There is a difference, however, between acknowledging that we can talk about counter-possibilia and requiring reference to them in order to be able to formulate your position, and the issue is more pertinent here then it might be in other debates (Merricks mentions, for instance, debates about persistence through time). By filling out the notion of O-arrangement in terms of M1 rather

than, as van Inwagen does, in terms of our everyday beliefs, Merricks gives the impression that the notion of an object-wise arrangement is not dependent upon our actual object concepts.

To see this, one might compare Merricks' claim with a claim about some possible object. Someone makes a claim about it being possible for there to be some object, let us say a transporter device as used to philosophical effect in *Star Trek*. Translating the idiom of talk about what is possible to talk of possible worlds, we can interpret the claim as the claim that there is a possible world w where there is a transporter device. What we have then, is essentially a functional definition of the device and a claim that there is a possible world where that definition is satisfied.

We could move from this position to a position with respect to how things would have to be in our world in order for there to be such a device. We might say for instance, that if there were simples in the actual world which stood in the same relations and instantiated the same properties as the simples that compose a transporter in possible world w (and the laws of physics were relevantly similar in both worlds) then there would also be a transporter in the actual world. Whether such a thing is in fact possible (given the physics of the actual world), is a matter of empirical fact. Either it is possible to make such a transporter or it is not.

Compare this example with Merricks' use of impossibillia, however. In our example, whether a transporter is possible or not is a matter entirely independent of whether or not we have the concept of a transporter. It might have been that such a device is possible but it never occurred to us to make one. It might also be that somewhere in the universe such a device came about by accident without anyone ever knowing about it.

By defining object-wise arrangements in terms of supervenience on the substructure of 'possible' objects, Merricks appears to define object-wise arrangements in a way which is similarly independent of whether we have any concept of the objects upon whose substructure they are supposed to supervene. In fact though, because Merricks thinks that such objects are impossible there is no way that any simples could supervene on the substructure of one. What we have is just the functional definition of the object that would have to be satisfied in a world where it existed – just as we have a notion of what would have to be the case for there to be a transporter device. The only possible source for this sort of functional definition with respect to everyday objects is our actual scheme of object concepts.

In fact, Merricks, like van Inwagen, cannot fill out a notion of object-wise arrangement without utilising the object concepts that we in fact have. Merricks and van Inwagen therefore accept the basis of the account of objects presented in the previous chapters: they accept that there is matter in our environment, they accept that our object concepts pick out arrangements of this matter that generate macroscopic properties and they are clearly committed to our ability to deploy our object concepts. What they deny is that there are objects that satisfy our object concepts.

The suggestion being made here, therefore, is that without a robust conception of composition on which to base their claim that everyday objects must be composite, the Organicists' position is in effect self defeating. The O-arranging manoeuvre depends upon our having everyday object concepts and it entails that there are arrangement structures in our vicinity that satisfy those concepts. It was argued in Chapter Two that this is all that is necessary for there to be everyday objects. However, as we shall see in the next two sections, abandoning the O-arranging manoeuvre is not really an option for Organicists.

4.2　What is the point of the O-arranging manoeuvre?

The manoeuvre has an important role for Eliminativists about everyday objects in mitigating the initial implausibility of their position: If they cannot get past the fact that their position seems self-evidently false, then the rest of their arguments will be ineffectual. The other important role for object-wise arrangements that will be noted below is that according to Organicists the object-wise arrangements in our environment are responsible for the macroscopic properties that we encounter. This does not, however, exhaust all the work that the O-arranging manoeuvre does for Merricks and van Inwagen. The O-arranging manoeuvre also plays a part in the argument from over-determination which is Merricks' master argument for the Eliminativist position and is discussed Chapter Six. It is also a key part of the argument behind van Inwagen's claim that his position is not contrary to common sense (see the next chapter).

One major consequence of the manoeuvre is that it enables the Organicists to make the 'no difference' claim:

> No-difference:　　Even if there are no objects, everything would seem just the same as it in fact does seem.

The importance of this for Organicists can be brought out by consideration of an alternative to compositional ontology. Compositional ontologies, it will be recalled, are based on the thought that we should be able to detail 'what there is' by reference only to mereological simples and rules of composition. An alternative to this approach to ontology was suggested in Chapter Two. It was suggested that the way to find out what is in the world is to go and have a look at it. Rather than trying to find *a priori* rules of composition in order to generate an ontology, we should go and find what things there are, and consider whether they have parts. We might call this approach Simple Empirical Ontology.

'Simple Empirical Ontology' suggests that the way to find out what there is, is to go out and look at the world and see what we find. But if the O-arranging manoeuvre is allowable and it entails the no-difference claim then what there is, is no longer something that can be discovered empirically. If the O-arranging manoeuvre is right it makes no empirical difference whether there are objects or not—the findings of experience on this account will be the same whether or not there are objects. Philosophical rather than physical investigation will be required to limn the structure of the universe.

As was hinted at in the dialogue at the start of this chapter, a common reaction of non-philosophers when confronted with the negative ontological claim is that it is obviously false. This response is generally combined with an incredulous stare[71]. Where an incredulous stare is not forthcoming it is often because the person has imagined that the thesis must be less extreme than it in fact is.

This may be because there is a way of understanding the O-arranging manoeuvre and the Organicist position which is quite natural, is liable to seem more charitable, and also involves misconstruing the negative ontological claim. This response takes the Organicist not to be making a claim about existence, but rather a claim about what things are fundamental[72]. This involves the following line of thought, which might seem appealing:

> We know that the world is made up of atoms/quarks/sub-atomic particles, what we encounter as everyday objects are then 'made of' these particles. We may suppose that these particles are the most basic building blocks of reality and everyday objects are not part of the fundamental building blocks of reality.

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[71] Other philosophers receive incredulous stares too, most famously Lewis (Lewis 1986) pp. 133-135. Roy Sorenson also reports receiving incredulous stares in response to a bald statement of Epistemicism about vagueness.

[72] See (Williams Forthcoming) for an attempt to make systematic sense of this thought.

If the Organicists' claim was something along these lines, then their position would be of interest less for the controversial negative claim than for the suddenly interesting positive claim—the claim that organisms are a fundamental part of reality while tables are not. This though is not the Organicists' claim. As van Inwagen is at pains to point out, his claim is not that objects are 'not real', or have some second-class status, it is that they are non-existent:

> 'Many philosophers, in conversation and correspondence, have insisted, despite repeated protests on my part, on describing my position in words like these: "Van Inwagen says that tables are not real"; "…not true objects"; "…not actually *things*"; "…not substances"; "…not unified wholes"; "…nothing more than collections of particles." These are words that darken counsel. They are, in fact, perfectly meaningless. My position *vis-à-vis* tables and other inanimate objects is simply that there *are* none. Tables are not defective objects or second-class citizens of the world; they are just not there at all. But perhaps this wretched material mode is a part of the difficulty. Let us abandon it. There are certain properties that a thing would have to have to be properly called a 'table' in anyone's understanding of the word, and nothing has all these properties. If anything did have them, it would be real, a true object, actually a *thing*, a substance, a unified whole, and something more than a collection of particles. But nothing does. If there were tables, they would be composite material objects, and every composite material object is real, a true object, actually a *thing*, a substance, a unified whole and something more than a collection of particles." (van Inwagen 1990) pp. 99-100.

The Organicists' negative existential claim is not the reasonable sounding (though still substantial and interesting) one that everyday objects are not the fundamental units of physics or reality. The claim is that they do not exist at all. In order to make the negative existential claim plausible the Organicists must be able to make the 'no-difference' claim, and the only way to do that is with the O-arranging manoeuvre.

It is difficult to overstate the importance of the 'no-difference' claim for the Eliminativist, or the importance of the O-arranging manoeuvre in establishing it. It can perhaps be brought out by considering what an Organicist might say to the following argument:

1) Organicism entails that there are no non-living everyday objects
2) It is self-evident that there are non-living everyday objects
3) If it is self-evident that there are non-living everyday objects then there are non-living everyday objects
4) There are non-living everyday objects
5) Organicism is false.

The reason that it is fairly natural to suppose an interpretation of the Organicists' claim that makes it less bluntly ontological is that, taken as it is presented, it seems self evidently false. One naturally reaches for a charitable reading for it. To counter an argument such as this the Eliminativist needs to be able to respond to the second premise. He needs to be able to say that it is not really self-evident that there are everyday objects; it merely seems that way. This then, is one part of the role of the O-arranging manoeuvre, another is to allow the claim that things would seem just as they do if there were no objects, this claim is explored in the next section.

4.3   The property role.

We have seen then, how necessary the O-arranging manoeuvre is for the Organicists[73]. It moves their position from being an obviously false philosophical sideshow to a theory in good standing that can be compared to other theories. In this section we will discuss its role in establishing that the world is causally as we suppose it to be, or as van Inwagen puts it, that the things that objects do, still get done. We will see later on that this is also a

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[73] It is also used by nihilists such as Cian Dorr (Dorr, 2002).

fundamental premise in Merricks' master argument for his Eliminativist thesis: the argument from over-determination. Here we will discuss the role of object-wise arrangements in 'doing what objects do'.

Van Inwagen puts the issue as follows:

> 'Consider the sentences "the sun shines" and "The shelf supports the books." According to the view I am advocating, there are no stars to do any shining and no shelves to do any supporting. Still, as one might put it, the shining and the supporting somehow get done. How, in my view, do they get done? Well they get done in virtue of the cooperation of simples. The simples that are arranged shelfwise cooperate to support weight; the simples that are arranged sunwise cooperate to produce light.' (van Inwagen 1990) pp. 117-8.

'The simples' in van Inwagen's formulation is to be read as a multiply referring term. Thus, 'the simples arranged shelf-wise', as used by van Inwagen, refers to some specific simples that are jointly engaged in a particular activity. In the case of shelves they are engaged in the activity of 'supporting'.

One of the obvious problems with denying the existence, of, say, aeroplanes, is that many of us will have travelled places in them. If there are no aeroplanes, then our ability to travel swiftly from one place to another by travelling through the air is in need of explanation. Similarly with chairs. We might construct an argument about chairs as follows:

1) Jeremy Bentham is sitting in a chair
2) The chair supports Jeremy Bentham's weight
3) If there were no chair, then Jeremy Bentham's weight would not be supported
4) If Jeremy Bentham's weight were not supported, then he would fall to the ground.

Our grasp of counterfactuals is strong enough to allow us to conclude on the basis of this that if the Organicists' thesis were correct, and chairs were non-existent, then the premises above would entail Jeremy Bentham's falling to the ground. Since Jeremy does not in fact fall to the ground, we might suppose that this fact, together with the above premises constitutes an argument against Organicism. To defeat it, the Organicists must deny one of the above premises.

The premise that the Organicists would deny is premise three. They are able to do this because of the O-arranging manoeuvre. Premise three concerns the 'activities' of the chair, which have so far, been called properties of the chair. In particular it concerns those activities that are involved in its supporting Jeremy Bentham. It is key to the Organicists' position that they be able to deny the counterfactual claim (and others of the same form) that if the chair were not there, Bentham would not be supported. The O-arranging manoeuvre allows for this by substituting a collection of simples for the chair, and suggesting that they do the supporting. This then, can be understood as a more ambitious version of the no-difference claim[74]:

> No-causal-difference: If there were no everyday objects it would make no causal difference in the world.

It needs to be noted that the no-difference and no-causal difference claims are essential to the Organicists' position and that it is the O-arranging manoeuvre which makes them plausible.

It would be tempting, but potentially misleading, at this juncture to suppose that the manoeuvre could be schematically filled out in something like the following way and that this is a corollary of no-causal-difference:

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[74] Because perception is a causal process we can think of the original 'no difference' claim as a weaker version of the no-causal-difference claim.

> If one would in the normal course of things suppose that there was an everyday object with properties *F,G,H* and so on, then in fact there is an object-wise arrangement of simples that cause *F,G,H* and so on.

The risk of being misled comes from the phrase 'there is an object-wise arrangement of simples'. This can be read in one of two ways. If read as 'there are some simples which cooperate in order to produce the properties', then this is okay. The risk is that one might read the phrase as reifying the object-wise arrangement. Organicists talk about object-wise arrangements, but they do not suppose that there is any 'thing' which is an object-wise arrangement. This may be one reason why one sometimes feels that there is an element of sleight of hand in the O-arranging manoeuvre. It allows for one to talk as if there were some replacements for objects (to wit, 'object-wise arrangements') but in fact posits no such things. Van Inwagen at points, and quite often towards the end of *Material Beings*, writes of object-wise arrangements as 'virtual objects'. This reads as a hypostatization of object-wise arrangements and is potentially misleading. It will be important in what follows to keep in mind that object-wise arrangements are not supposed to be 'things' or 'substances'. In fact, they are not supposed by Organicists to exist at all: the Organicists' claim is that there are simples arranged in certain ways, but there are no arrangements of simples. It is an important part of the Organicists position that a bunch of simples arranged in a certain way, do not thereby constitute an arrangement of simples.

The Organicist strategy then, does not involve denying the existence of properties in the environment around us. Not even macroscopic properties[75]. Rather it involves suggesting that they occur without there being any single entity to which they belong. In the last two chapters we saw that supposing that

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[75] Though Merricks at one point suggests that macroscopic properties are not properly sparse (Merricks 2003) p. 736, as they are dependent on microphysical properties that are more fundamental. This is not something that I need to dispute—so long as we accept the systematic link between subatomic properties and macroscopic ones.

there are properties but no objects gives rise to the coordination problem. That is, it leaves the following question unanswered: Why is it that properties coordinate in the way that they do, if there is no object for them to coordinate about? On this subject, Organicists are almost entirely silent.

One reason for their silence might be that they do not acknowledge the sorts of sparse properties that were introduced and discussed in the last chapter. Merricks has not, to date, proposed a theory of properties, although he has a good deal to say concerning the supervenience of macroscopic properties on microscopica, and in (Merricks 2007) he argues for a fairly minimalist theory of truth, and certainly against the notion of 'truth makers'. Van Inwagen does advance a theory of properties (van Inwagen 2004), but there are significant reasons to suppose that the theory he proposes is of merely tangential relevance to the quote above, as we shall now see.

Van Inwagen takes properties to be 'things that can be said' of objects. His is an 'abundant' account of properties, and he is quite clear that the properties that he is discussing are 'abstract'. He contends that while it is difficult to precisely characterise what being abstract amounts to there is fairly broad agreement amongst philosophers about which sorts of things should be characterised as abstract and which as concrete. Generally, we may take *War and Peace*, as abstract in the following context "'*War and Peace* has been translated into 39 languages'", but the particular copy of *War and Peace* in my bag is concrete (van Inwagen 2004), p.108.

Van Inwagen then, does not, and is explicit that he does not, think that properties are things that belong to objects; he dismisses the notion of alphabetic parts (as introduced above in section 1.3) out of hand. His view is not, in spirit, very different from the sort of pleonastic realism about properties advocated by Stephen Schiffer (Schiffer 1996). Schiffer though, links his account

to a minimalist account of truth and meaning[76]. If one is going to advocate an abundant view of properties then this raises a question about the relationship between properties and meanings (i.e. propositions), and truth. On such an account, remember, what properties there are is closely related to what we can say. Without an account of this relationship it is difficult to draw any conclusions concerning how these properties should be related to our metaphysics.

In what follows the term 'property' will be retained to apply to the sorts of sparse properties presupposed by the last four chapters. Where abundant properties are under discussion, the term @property will be used.

We need to be clear that even if Organicists were to adopt a minimalist account of truth or an abundantist account of properties they would still need to give an account of the (sparse) properties that objects have. At the macroscopic level, these properties are just regularities in our environment that, even assuming a minimalist theory of truth and an abundant theory of @properties, are implicated in the way that we think about the world, and hence what predicates there are and what @properties we actually talk about. Armstrong in (Armstrong 1978a) argues for the separation of the theory of universals from the theory of semantics. The property theory offered by van Inwagen is, given the current state of property theories, a retrograde step. Even if we accept his account though, one can still distinguish @properties generally, from those @properties that relate to properties that are necessary posits of a complete science or track causal relata in the world. These latter @properties are such that, even if they are said of an object, whether they are true of the object depends in a very concrete way on how the world is.

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[76] See also (Horwich 1998a), (Horwich 1998b) for an alternative version of a 'minimalist' account of truth. Both Schiffer and Horwich are approaching the question of properties in order to solve problems in the philosophy of language, rather dealing with metaphysical issues such as causation.

Here is a way of understanding this point. One of the ways we use property language is to explain things. For instance, the tray on a set of scales sinks one way rather than the other because the objects on one side weigh more than on the other. Which is to say: objects on one side had a greater mass than the other, and so, being under an equal gravitational field, exerted a greater downward force. Notice that in this example there is nothing that the Organicist need object to.

Let us suppose that the weight of the objects in question is one kilogram. We can say of the objects that they weigh one kilogram. They therefore have, according to van Inwagen, the property of weighing one kilo. This is something that we can say, and it something that is true (let us suppose). But the reason we can say this is the way the objects act in given contexts (of which being placed on a scale is just one).

This is all we need to get the position outlined in the previous chapters going. And it is the function that in the quote above (see p. 152) van Inwagen was attempting to explain with the O-arranging manoeuvre. Placing ourselves in the position of one of the early British empiricists, considering the impressions which come to him, we exist in a world that appears to us a certain way. It appears that way because of regularities in the way that it is arranged. We need no more than this to arrive at the notion of an object form.

The claim of this chapter then is as follows. The O-arranging manoeuvre is integral to the Organicist position. Organicists need it to account for the regularities in the environment around us; they need it to make their position even plausible; and they need it to make the 'no difference' and 'no-causal-difference' claims, which are also integral to their position.

Once they have deployed the O-arranging manoeuvre and the no difference claims, Organicists have to acknowledge two things that allow the argument of the last two chapters to get off the ground.

The first of these is that there are collections of regularities in our environment, which we take to be objects and which exhibit properties. This is a feature of our experience of the world and is in fact part of the data that the Organicist is trying to account for with the O-arranging manoeuvre. If the 'no-difference' claim is to be accepted, then so must the existence of those regularities. We were therefore justified in positing object forms in Chapter Two.

The second is that the very idea of an object-wise arrangement licenses the use that was made in the previous chapters of the notion of an arrangement formation and the related notion of an arrangement structure. If arrangements of simples are to do the things that Organicists require them to, then they cannot just be arbitrary selections of matter. To see that the O-arranging manoeuvre requires arrangement structures it should be enough to note that the atoms which, in their chairwise formation, support Jeremy Bentham, would not do so at all if instead they were laid out in a line along the M1. They are only causally effective because of their *arrangement*, or in the terminology developed here, because of the structure that relates them to each other.

The O-arranging manoeuvre, therefore, supplies us with all we need for there to be objects. We have collections of regularities in our environment (i.e. object-forms), and we have arrangement structures (because otherwise the simples would be causally inefficacious) that give rise to them. If the Organicists use the O-arranging manoeuvre, as they must, then they have provided us with all that we need to warrant our conclusion that there are indeed everyday objects and hence that the Organicists' negative ontological claim is false.

Chapter Five: The O-arranging manoeuvre, object concepts and metaphysical commitment

We have seen some of the ways that the O-arranging manoeuvre has been used by Organicists, and it has been argued that the manoeuvre is absolutely fundamental to the Organicists' position. We have also seen that the manoeuvre cannot be formulated except in terms of the object concepts that we actually have. At this point it is worth exploring the relationship that Organicists think holds between our object concepts, the terms they are expressed with and the world. Above it was argued that if our object concepts are satisfied, then there are objects. Here it will be argued that Organicists, by virtue of the use they make of the O-arranging manoeuvre, are committed to our object concepts being satisfied.

Clearly Organicists cannot hold that our object concepts pick out objects, because Organicists hold that there are no such objects for them to pick out. Neither can they hold that our object concepts just *fail* to express anything about the world: They must bear some relation to the world because as a matter of fact they do rather well in helping us to get around in it. Organicists must be able to distinguish between concepts such as 'chair' which they say refer to things that do not exist but which most people take to pick out bits of the furniture of the world, and concepts which apply to things that we all agree do not exist, such as the hydra of Greek legend. The obvious line for Organicists to take, given the O-arranging manoeuvre, is to say that the utility of our object concepts can be explained in some way in terms of our relations to collections of simples arranged object-wise.

The issue can be understood in one of two ways. It can be understood in terms of a question about beliefs. Construed this way, the question is: If there are no everyday objects, how come we do so well at navigating the world with our object concepts? Alternatively the issue can be recast in terms of the semantics of our object terms. Understood this way, the question is, how are we to make sense of the apparent truth of so many of our object expressions—those elements of our language that we usually take to be referring to objects?

Clearly these two questions are closely related; our beliefs about objects are expressed with those object expression in question. The most straightforward explanation for the utility of our object-directed beliefs is that they are (for the most part) true.

Those of us who think that the world is populated with objects have an interesting story to tell about the way that those objects relate to our object expressions. Reference to the bodies in our environment is a somewhat complex matter, and much has been written about it, including some of the classics of 20th century philosophy (e.g. (Strawson 1959), (Quine 1960), (Evans 1982), (Wiggins 2001)). Most of these accounts simply assume the existence of everyday objects and can be taken to be consistent with the metaphysics of objects presented in the foregoing chapters.

If we assume the existence of everyday objects then certain other assumptions become reasonable[77]. One of these is the assumption that whatever account of reference to physical objects we develop will have to allow that the reference of object terms is established in the context of causal interactions with objects.

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[77] Reasonable does not mean uncontroversial. Someone with a descriptive theory of reference might accept that as a matter of fact it is often the case that reference to objects is established in the context of causal interactions with them without accepting that this has anything to do with determining what the term picks out.

Some sort of causal constraint can be plausibly supposed to be a necessary condition for our ability to talk about everyday objects. We can label the causal relationships, whatever they are, that are required for us to talk about everyday objects, the 'causal constraint' on reference relations. We will take this term to encompass whatever causal relations are required in order for our object concepts to be used to pick out objects.

This specification of the causal constraint on reference for our everyday object concepts is quite weak. It does not, for instance, mean that reference to anything at all must involve some sort of causal relation to the referent. It may be that there are numbers and that we are able to refer to them quite well without ever standing in a causal relation to them. We also need a way of picking out in conversation fictional things and other non-existents. Everyday objects, however, are not those sorts of thing. Everyday objects are the sort of things that, if they exist and we can refer to them, must stand in some sort of causal relation to us. The causal relation might be at some remove. It may be that I can talk about my grandfather's vegetarian cat, even though I never encountered it myself, but there is none the less some sort of causal relation involved. Noting that there are causal relations that ground our ability to refer to everyday objects does not commit us to a purely causal theory of reference. What matters is that in general, the notion of reference presupposes some causal interaction between the things being referred to and some act of reference[78].

The account we give of the way that the references of our everyday object concepts get established will need to take account of this causal constraint on reference[79]. We might think, for instance, that we fix the concept of 'chair' by a combined process of having examples of things with chair functions pointed out ('look a chair'), just observing what others pick out when they use the word,

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[78] This line will clearly be most consonant with a causal theory of reference such as those presented in ((Evans 1973) or (Kripke 1980)). Even if one were attracted to some sort of description theory, however, arguably causal relations to objects would still be needed in order for us to be able to give descriptions of any of them.

[79] See for instance, (Devitt and Sterelny 1987), (Evans 1982), (Jackson 1998).

and by having the norms of use socially enforced ('that's not a chair, it's a table'). But part of our concept of a chair covers its causal properties and the ways that we can interact with it. Even on this very simplistic sort of account of reference fixing[80], what it is that we are referring to with the word 'chair' will depend upon what was pointed out to us when we learned the word 'chair'.

While Organicists do not think there are non-living objects, they do, as we saw in the previous chapter, suppose that the causal interactions of objects still occur; only they take them to be the cooperative interactions of simples arranged object-wise rather than of objects. In Chapter Two we coined the term 'object-form' to pick out the collections of macroscopic properties that we associate with objects. We can suggest without begging the question against Organicists that the reference of our object terms is established in the context of reference fixing acts that are directed to these forms. It will be argued in what follows that Organicists too must accept such a causal constraint upon reference.

A fortiori the linguistic issue for Eliminativists about everyday objects arises because it is clear that if there are no everyday objects, then there are no objects for us to be picking out with our object concepts. Clearly, however, our object concepts are not picking out nothing; there are things that are causally related to our use of object concepts. Our object concepts pick out bits of the world in a systematic and comprehensible way. If there are no objects, then this is something that is in need of explanation. For Organicists object-wise arrangements of simples have an important role to play in such an explanation.

It will be helpful in what follows to focus on what semantics requires for the truth of our object-expressions. To bring the problem into sharper focus, we can consider that something along the lines of the following is often taken to be

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[80] Some comments from van Inwagen suggest that he would accept an analogous model for establishing reference to groups of simples arranged object-wise. See for instance (van Inwagen 1990) p. 109 fn. 40.

a basic assumption of truth conditional semantics, this version is taken from (Evans 1982), p. 49[81] and gives reference conditions for atomic sentences:

'(P)   If S is an atomic sentence in which the n-place concept expression R is combined with n singular terms $t_1\ldots t_n$, then S is true iff <the referent of $t_1\ldots$ the referent of t_n> satisfies R.'

The point of this principle is that it ties reference to truth. A sentence comes out true if and only if the singular term in the sentence picks out something that satisfies the concept. Given an assumption along these lines, the problem for Organicists can be summed up with the following question: Where our everyday sentences appear to refer to everyday objects, is there in actual fact a failure of reference? If a sentence such as 'this chair is uncomfortable', fails to refer because there is no chair to be the referent of the sentence, then presumably it comes out false according to P[82]. If much of our object speech turns out to be false, then this finding will also be true of our beliefs; we can suppose that some similar principle to P will need to hold in giving truth conditions for mental content (as well as for more complex linguistic expressions). The same issue will arise for other parts of speech that have been thought to be singular referring terms. Whether or not a definite description such as 'the chair in the living room' is taken to be a referring expression or a quantifier phrase, it shares with atomic sentences that contain referring expressions that it requires something of the world in order for it to be true.

There are two options for the Organicist here. One option is to ascribe a global error to everyone using object concepts and hold that most of the time when we use object expressions we say something false. This would follow from a

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[81] It is also referenced in (Sainsbury 2005) p. 79. Sainsbury notes that an analogous principle seems equally plausible with respect to plural referring expressions.

[82] If we take ourselves to be ontologically committed to those things that have to exist for what we believe to be true, then P tells us that if we believe 'this chair is uncomfortable' is true, then we are committed to the existence of a referent of the term 'this chair' which is uncomfortable.

principle such as (P) and the purported fact that there is nothing that can satisfy our non-organic object concepts[83]. Given the argument that was presented earlier that if our object concepts are satisfied then there are objects, this first option might seem attractive to Organicists, and it is the line that Merricks takes.

The other option is to offer an alternative semantics whereby most of our uses of sentences containing object expressions (and hence our object-directed beliefs) come out as true. We will treat this as the position that van Inwagen takes, though at places (e.g. on (van Inwagen 1990) pp. 102–103) he notes that he could retreat to a position more closely approximating Merricks'. In what follows we will find that both these responses lead the Organicist into trouble.

5.1   Merricks on the falsity of our object speech and beliefs

Taking the first of these options, Merricks holds that claims that we might make about the existence of everyday non-organic objects in the normal course of life are false since there are no such objects.

Merricks only explicitly discusses existential claims, but it is worth noting that if these are false then that transfers to many other areas of speech[84]. Given (P) we can take it that a sentence such as 'that cricket ball is red' would turn out false if

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[83] We can envisage this sort of reference failure happening in several ways. Expressions such as 'this is a chair' (said when gesturing to a chair), can be taken to be constituted by a referring expression 'this' and an object concept expression 'chair'. Clearly, if there is no chair then nothing satisfies the concept 'chair'. There will also be reference failure where everyday objects feature as the referent to which some non-object concept is being applied. e.g. 'this chair is a bit rickety'.

[84] Since Quine (Quine 1953) it has been a philosophical commonplace that the statements that matter for the purposes of establishing metaphysical commitment for some category of entity are those which can be interpreted as involving quantifiers (see (Devitt 1980) and (Jackson 1977) (reprinted in (Mellor and Oliver 1997)) for good examples of how the technique of paraphrase plays out in a debate between nominalists and people who hold that there are universals). The basis for this is Quine's claim that we can paraphrase empty referring terms in terms of trivial descriptions which are analysable in terms of quantifiers. Here, however, we are not inferring ontological commitment to the referents of referring expressions from the use of those expressions. Rather we are establishing whether paraphrase would be needed in order for applications of our everyday object concepts to come out true.

it turned out that there are no such things as cricket balls. We can suppose, that is, that in the absence of cricket balls there is no referent that satisfies the concept expression 'is Red' in the context given. If our everyday object speech is false when it concerns non-living things, then so are the relevant beliefs.

According to Merricks, the fact that everyday object claims are false, while surprising, does not matter. Take the following sentence:

S1:   There is a chair that I'm sitting upon

The reason Merricks thinks that it does not matter that our everyday object sentences are false is that they are, as he puts it 'nearly as good as true'. In saying S1 I have said something false, but I have, according to Merricks, said something 'nearly as good as true' where:

'Any folk-ontological claim of the form 'F exists' is *nearly as good as true* if and only if (i) 'F exists' is false and (ii) there are things arranged F-wise.' (Merricks 2001) p. 171

Thus, although I have said something false in talking about my chair, I have not said anything as bad as 'there is a flying horse that I am sitting on', which would fail to be true, but also fail to be 'nearly as good as true'. Merricks accepts that our everyday speech and beliefs involve a substantive metaphysical commitment to the existence of chairs and that as a consequence our chair related speech is, for the most part, false. Suppose a person, B, says the sentence S1. According to Merricks this is false as there is no chair that she is sitting on. It is, however, 'nearly as good as true' because although there is no chair, there are some simples arranged chair-wise.

Worries can be raised about this line of argument however. One concern is how the semantics of 'nearly-as-good-as-truth' are supposed to work. There is a long and distinguished philosophical literature discussing what is involved in some

sentence or proposition being true[85]. There is less literature[86] on what is involved in something's being 'nearly as good as true'. What goes right when what one says is nearly as good as true?

We can express what is required for any given sentence S to be true with the following uncontroversial truth schema:

T: 'S' is true iff S

Thus when 'there is a chair that I am sitting on' is true, it is because there is a chair that I am sitting on. We have a pretty good understanding what goes right when a sentence turns out to be true. We also understand why truth is a good thing: actions based on true beliefs are more likely to be successful, and if we have true beliefs that means we are in a useful way connected with how the world is. Merricks' strategy is to 'piggy back' his account of 'nearly as good as true' upon the much better understood account of truth. If this is to work, however, then it must work for a wider range of sentences then the exemplar he gives nearly-as-good-as-truth conditions for. It needs to work not just for sentences such as 'F exists', but also for sentences which predicate properties of everyday objects and sentences, such as S1, that claim that there are relations that objects stand in to other things.

Merricks maintains that S1 is false, but he should accept that it is (in his terms) 'nearly-as-good-as-true'. If it is not nearly-as-good-as-true then many sentences like it will turn out to be neither true, nor nearly as good as true. This is not a result that Merricks can accept. He must accept that sentences that refer to non-living objects are nearly as good as true.

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[85] See for instance, (Tarski 1944), (Davidson 1967), (Horwich 1998a).

[86] Though, there is some recent work which might prove fruitful in this area e.g. (Williams Forthcoming).

Suppose that S1 is, as Merricks must say, false, but nearly-as-good-as-true. It is difficult to see why this being 'nearly as good as true' would be any comfort to us unless we can give a reason why being nearly-as-good-as true is valuable. We need an explanation of what goes right when something is nearly as good as true which is parallel to the explanation of what is right when something is true.

Taking S1 as an example, we can see what such an explanation would have to look like. Suppose a person, B, were to utter S1 in circumstances where we would normally take an utterance of S1 to be true. Granting for the moment that there are no chairs, what 'went right' when B said S1 could be glossed as follows:

> If S1 had been true, then there would have been a relation R between B and a chair (the 'sitting on' relation) and S1 states that R is satisfied by B and the chair. While there is no chair, R does hold, but between B and some simples arranged chair-wise. Thus, while S1 is false, the relation that it says is satisfied is still satisfied.

One could expand on this. It is tempting to think that we could posit a systematic replacement of objects referred to in our language with collections of simples arranged object-wise[87]. Wherever a sentence Fa predicates something of an object, we might think that it 'is almost as good as true' if there are some simples which cooperatively satisfy F. They are almost as good as true because they are justified by our experience in a way that straightforwardly false beliefs are not. What is more, beliefs that are nearly as good as true will enable us to navigate the world as well as true beliefs, because the real properties and relations that would make true beliefs true are still captured by nearly-as-good-as-true beliefs.

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[87] This is in fact something that Merricks suggests (see the discussion of Merricks' argument from overdetermination in the next chapter).

We might, however, ask the following question. If simples arranged object-wise stand in all the same relations that we thought objects stood in, why does this not go for reference relations as well? Why is it that when someone uses the word 'chair' this should be interpreted as her *failing* to refer to a chair, rather then as her *succeeding* in referring to some simples arranged chairwise? (This seems particularly pertinent given the 'no-difference' claim that was discussed in the previous chapter (p. 148)).

Merricks' position suggests that he assumes that our object concepts are such that in general we know what we intend them to apply to. S1 is false, according to Merricks, because it was intended to apply to an object, but in fact it only applies to some simples arranged in the manner of an object. However, if he is correct then the world is phenomenally just as we take it to be, but is metaphysically quite different from how we take it to be. Given those circumstances the assumption that we know what we intend our object expressions to apply to seems unwarranted. It may be (granting Merricks' position with respect to what things are composite) that what our object concepts actually latch onto is things that are not composite. In this case, despite what we would normally be willing to say about our object concept ascriptions, it may be that our object concepts pick out object-wise arrangements of simples.

It is argued in earlier chapters that what our object concepts map onto are clusters of properties—regularities in our environment—and that these are caused by arrangements of simples (arrangement-formations). Granting this claim, we have good reason to suppose that our object concepts relate to object-wise arrangements in just the way that they would need to in order to refer to the object-form that they give rise to.

Earlier we noted that in order to make sense of the way that object expressions track things in the world we need to acknowledge the causal relations involved in grounding the reference of those terms. It should by now be evident that the

causal relations in question can be usefully filled out in terms of object forms. Object forms, it will be recalled are those collections of properties that are generated by arrangement-formations. They are also a key part of the causal context in which the references of object expressions are established. As was noted in the previous chapter; the Organicist is not in a position to deny the existence of object forms.

My argument then is as follows: In order for there to be explanatory value to our object expressions being 'nearly-as-good-as-true', such expressions must capture real properties and relations in the world that are instantiated by collections of simples arranged object-wise. These real properties are generated by object-arrangement formations (or, more precisely, by the efficacious substructure of those formations). As these are the things that stand in the relevant causal relations to people when the reference of object terms is established, they are the referents of those terms. We can put this conclusion loosely in Merricks' terms: regardless of what we think we are referring to with our object expressions what they actually pick out are object-wise arrangements of simples. This is only a loose way of putting the point because the terminology introduced in Chapter Two allows for a more nuanced account of object-wise arrangements than Merricks' discussion does. In particular, Merricks does not allow for the notion of an object form. Merricks would likely object that there is no such thing as an arrangement of simples, but this is in itself somewhat counter-intuitive as once you have some simples distributed in space, their arrangement seems like a pleonastic addition.

We have then, at least some reason to think that when we deploy object concepts we succeed in referring. What we succeed in referring to are object-forms that are generated by object-formations in our environment. If we succeed in this way, then when we use the term 'chair' successfully what we are referring to are chairs in the only way that have of understanding the term. To think that there must be some more objective understanding of chair (one that involves, for instance, their being composite) over and above that which we

actually have is to insist that our chair concepts fit in with some platonic form of chairness[88].

Were we to accept for the sake of argument that Merricks is right and there are no non-living composite objects, then the general failure of some predicate to be satisfied by everyday objects would only occur because we had failed to pick out some simples arranged object-wise with our object-concept. But then if the Organicist thesis is correct, it would be false to say that we generally fail in this way. For if it is correct it is object-wise arrangements that our object concepts refer to. But if our object concepts are satisfied, what possible sense can there be in a claim that there are no objects?

5.2 Van Inwagen on the truth of object speech and beliefs

Van Inwagen's account of our object concepts is quite different from Merricks'. Van Inwagen argues that our everyday use of object concepts does not involve any sort of metaphysical commitment to the existence of everyday objects. This may at first blush appear a slightly odd position for him to hold, but it is particularly incongruous in the context of his other views on the existential quantifier.

In (van Inwagen 1998) van Inwagen defends what he terms a 'meta-ontology' that is 'broadly Quinean'[89]. What he means by this is that he defends the view that there is only one sort of being or existence, and that this is what is expressed formally by the existential quantifier. He is quite explicit that the existential quantifier is a translation of our normal, everyday, use of the words 'exists' and 'is'.

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[88] That is, that there is such a thing as 'the proper' concept of a chair and that this is in some way different from the 'chair' concept which we, as a matter of fact, do actually use.

[89] He keeps that position and develops that article in (van Inwagen 2009).

It would seem then, that according to van Inwagen when one assents to the following sentence:

S1:	There is a chair that I am sitting on

That this should be translated straightforwardly as:

P1:	$\exists x$ (x is a chair & I am sitting on x)

By any Quinean set of standards this involves an ontological commitment.

It is worth noting here one option which is not open to Organicists. They cannot say that there is an arrangement which stands in the 'sitting' relation to me. Organicist must deny that there is any implication from:

'There are some simples arranged chair-wise'

To:

'There is a chair-wise arrangement of simples'.

While to most of us such an inference seems natural, Organicists must reject it. To accept such an inference would allow their opponents to say (what is argued here) that what we pick out with our object expressions are arrangements of simples.

Van Inwagen however, argues that he can use the O-arranging manoeuvre in order to provide a paraphrase of sentences such as 'There is a chair that I am sitting on', which does not commit us to the existence of chairs (or to the existence of chair-wise arrangements of simples). Van Inwagen ((van Inwagen 1990), pp. 109-111) gives us three versions of the paraphrase, but they all make use of the O-arranging manoeuvre. He exhibits the technique of paraphrase

with what he takes to be a 'reasonably difficult case' ((van Inwagen 1990) p. 108), which is 'some chairs are heavier than some tables'. His claim is that he would be able to perform a similar paraphrase for any other speech about non-living objects. His favoured paraphrase is as follows:

P2: 'There are xs that are arranged chairwise and there are ys that are arranged tablewise and the xs are heavier that the ys' p. 109

We may extrapolate from this to the somewhat easier case introduced above. 'There is a chair that I am sitting on' becomes:

P3 There are xs that are arranged chairwise and I am sitting on the xs

The paraphrase P3 then, contains no reference to any *thing* which is a chair. Only xs, which in this context are simples, are quantified over. The only ontological commitment here, or so van Inwagen would argue, is to these simples[90].

This sort of paraphrase manoeuvre has become fairly common in philosophy. It enables Quine, for instance, to avoid commitment to universals ((Quine 1953)). Standardly, however, it has been used to show how *reference* to some entity or other does not involve one in an ontological commitment. Here, however, van Inwagen is arguing (somewhat quixotically one might think) that making an explicit claim that something exists (or that there is some thing of a given type) does not involve an ontological commitment.

We may reasonably take the Quinean account of quantification defended by van Inwagen in (van Inwagen 1998) to be fairly standard, and we may take the

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[90] Though recall that in Chapter One some difficulties were raised for this notion of a simple. We might add that our ability to refer to these purported simples remains slightly mysterious, as taken individually we have no way of interacting with them.

account of concept satisfaction encapsulated above in (P) as standard too. Given this it is most natural to read van Inwagen as proposing a non-standard account of the meaning of our object terms. Van Inwagen takes it to be the case that our everyday object speech is (for the most part) true when we think it is true. But if that is the case then he is giving a different account of the satisfaction conditions for our everyday objects concepts then the standard one represented by (P). If the standard semantics is correct then 'this is a chair' (said while pointing to a 'chair receptacle') comes out true only if there is something that satisfies the concept 'chair'—and van Inwagen thinks it comes out true even though nothing satisfies that concept[91].

It is thus slightly surprising to find that van Inwagen explicitly denying that he thinks the meaning of our object expressions are captured by his paraphrases, for instance:

> '…I will revert briefly to a topic touched on in the preceding
> section and emphasize that paraphrases are not supposed to
> capture the meanings of their originals' (van Inwagen 1990)
> p.112

This is puzzling. If his paraphrase is not supposed to capture the meaning of our object speech, then there is an important lacuna in his position. He owes us an account of the semantics of our object terms. Whatever account he offers will not be the standard one. Van Inwagen's master argument is that his theory of everyday objects is better than the alternatives. But if the superiority of his metaphysical theory is bought at the expense of truth conditional semantics, then that is a significant cost to weigh against the purported benefits of Organicism.

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[91] Technically, he would allow the possibility of chairs—they would, he supposes, exist if they were made out of a living thing. A chair hollowed from the bough of a still living tree would presumably count.

What van Inwagen *does* say is that the meaning of our object speech is indeterminate between the standard and paraphrased meanings[92]. One way of construing this is by saying that while the semantics of our everyday object speech might suggest (or even entail) the existence of objects, when we use such sentences we are speaking in a 'loose and popular' way. That is, we are saying something which is literally false, but that what we are claiming by making that speech is true[93].

This last reading seems to be born out by the analogies that Van Inwagen uses to illustrate his position (e.g. (van Inwagen 1990) p. 101). The analogy that he treats as 'most instructive' concerns one of our contemporaries saying 'the sun has moved behind the trees'. We would not, he suggests, challenge the utterer of such a sentence to justify their pre-Copernican astronomy[94]. Van Inwagen's idea is that the same fact (the change in orientation between the speaker and the sun, such that the sun has been occluded by the trees) can be described in two ways, one of which is complicated and Copernican, one of which is 'everyday' but simpler and equally true. Similarly we are supposed to understand everyday object speech as accurately describing 'the facts' even if not being strictly correct.

It has been pointed out (see (O'Leary-Hawthorne and Michael 1996)) that this is actually a curiously bad analogy to choose. We are very used to making sense of speech about relative motion. My speed relative to the passengers of a fast moving train will be different depending upon whether I am on the train or on the platform watching it go past, and we have no difficulty making sense of this

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[92] This in fact appears to be his position—but if we accept this then we are owed an account of just what the semantics of everyday object speech *do* commit us to.

[93] Alternatively: our speech communicates truths even though it is false. This then, begins to look a lot like Merricks' position, and it seems difficult to resist the suggestion that what is being communicated is that there are object-forms in the various relations that we take objects to be in.

[94] These analogies have been effectively criticised by Penelope Mackie (Mackie 1993). Van Inwagen's general 'compatiblist' approach is discussed in (O'Leary-Hawthorne and Michael 1996), where there is also a detailed discussion of van Inwagen's analogies.

in everyday speech[95]. The point is that there is a disanalogy between movement speech and object speech. Any plausible account of the semantics of our everyday speech about movements would need to take in to account the fact that we understand movement in a relative way. If I am standing on the station and I see a train shoot past and say 'that train is going fast' it is plausible to suppose that an account of the meaning of that utterance, and even of the sentence itself, will need to include the fact that it is moving fast *relative to me*. There is no analogous reason to suppose that the normal meaning of our object-terms should take into account the atomic theory of matter, or the possibility that there are no objects.

Similarly, Merricks criticises van Inwagen's account on the basis that while we might acknowledge that someone talking about the movement of the sun is talking in a loose way for convenience sake, this seems to be an unlikely conclusion to draw concerning someone who says 'there is a chair that I'm sitting upon'. The latter person seems to be speaking in a perfectly clear and precise way ((Merricks 2001) Chapter 7).

We have then reason to reject the suggestion that our object speech is 'loose and popular', and even if this were acceptable, we could still ask van Inwagen for a semantics of our object speech which does not make it come out false.

Van Inwagen proposes four features of the paraphrase:

'(A)   The paraphrase describes the same fact as the original.

(B)   The paraphrase, unlike the original does not even appear to imply that there are any objects that occupy chair-receptacles[96].

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[95] Jackson (Jackson 2007), for instance, argues for a literal understanding of movement speech.

[96] See above p. 140 for discussion of chair receptacles.

(C)   The paraphrase is neutral with respect to competing metaphysical theories, *viz.* the "received" theory, that there are objects that occupy chair-receptacles, and the theory I have proposed according to which there are no such objects.

(D)   The original, though it doubtless does not express the same proposition as the paraphrase, has the feature ascribed to the paraphrase in (C): It is neutral with respect to the question whether there are objects that fit exactly into chair-receptacles.' (van Inwagen 1990) p. 113

His position then is that when I say 'there is a chair that I am sitting on', this does not commit me to the existence of a chair, nor to there only being some simples that are arranged chairwise. (This makes more sense when you remember that for van Inwagen the difference between the truth of one or the other is just a matter of whether the simples that do the work of a chair compose something).

What then is the content of the sentence 'there is a chair that I am sitting on' supposed to be? Well the clue to this can be found in the 'no-difference' claim discussed in the last chapter. There it was noted that one of the dialectical roles of the O-arranging manoeuvre is to show that the world would seem just as it is, even if the negative ontological claim of the Organicists were true. If we grant this, it is somewhat plausible to suppose that whether there are chairs does not impact on the truth (or not) of S1. The reason for this is that S1 can be taken as describing the same bit of the world whether or not there are chairs, and as the world is qualitatively unchanged regardless of whether or not there are everyday objects this means the same distribution of properties in the world is described.

Taking this line, we can understand van Inwagen to be saying that our everyday object speech is true for more or less the same reason that Merricks takes it to be nearly-as-good-as true: because the properties our speech picks out are instantiated and the relations that it picks out do hold, whether they are relations between simples arranged object-wise or relations between everyday objects.

If this is the thought, however, then it seems as though what our object speech picks out is actually the collections of properties that we associate with objects of various kinds. To put the point in the terminology developed in Chapter Two of this thesis: our object concepts are satisfied by object-forms. If this is the conclusion, then, it has been argued here, we have no reason to suppose that there are no objects. If this is what our object concepts pick out, then our object concepts are satisfied by our environment and there are objects.

It might be objected that reference to an object form is not quite the same as reference to an object-arrangement. It was noted in the last chapter however, that an important role of the O-arranging manoeuvre is to account for the causal properties of objects. Occurrence of such properties and object-wise arrangements will coordinate in the vast majority of actual cases. What is more, any experience of object-wise arrangements will really be experiences of the causal properties that they produce. It seems unreasonable then to expect our unreflective deployment of object concepts to mark a sharp demarcation between forms and the object structures (and hence the actual object formations) that give rise to them.

The thesis defended earlier was that if our object concepts are satisfied then there are objects. It has been argued here (in Chapter 2) that contrary to what is supposed by van Inwagen and Merricks, satisfaction of our object concepts does not require that objects are composite, particularly given the arguably tenuous status of the 'composition' relation. In the last chapter it was argued that formulating the O-arranging manoeuvre requires an acceptance that we have object concepts. In this chapter it has been argued that by utilising the O-arranging manoeuvre in the ways that they do, the Organicists commit themselves to our object concepts being satisfied. Van Inwagen does this directly. In Merricks' case we have presented a challenge to the notion that we can plausibly attribute a global error to people with respect to object concepts.

In this chapter so far then, we have seen that Organicists have taken two distinct approaches to the claim that their position is contrary to our everyday beliefs. Merricks has accepted this claim, and van Inwagen has rejected it. We have seen that involved in each of these approaches are commitments to the way that our object concepts relate to the world. It was argued here that van Inwagen's position makes it seem clear that what satisfy our object expressions are object forms. The challenge for him is to say why this is not sufficient for there to be objects.

Merricks argues that his position is contrary to our everyday beliefs and that is why it is surprising. It was argued above that this is difficult to make sense of unless our object concepts pick out arrangements of simples in the way that we take them to pick out objects. We suggested that the utility of Merricks' notion of nearly-as-good-as-true comes from the satisfaction of our object concepts by object-forms. Given this, the challenge for Merricks is to say what is 'going right' when we say something that is 'nearly as good as true' and why we should not treat object concepts as successfully referring to object forms.

5.3   Objects and objectivity

There is more to say with respect to Merricks' position on the relationship between our object concepts and objects. There are two places[97] in which Merricks presents an argument that can be restructured as an argument for the explicit rejection of the claim that all that is required for there to be objects is the satisfaction of our object concepts, and this argument will be addressed in the last part of this chapter. The basis of Merricks' objection is that this would make ontology, at least in part, a matter of definition. We could, Merricks supposes, bring objects into existence merely by thinking up new object concepts.

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[97] Merricks presents a version of this argument in (Merricks 2001) chapt. 1 sect. 3 and in more detail in (Merricks 2000).

This allegation, if true, would go some way to vindicating the compositional approach to ontology. The advantage of a compositional approach, the thought would go, is that it gives us a way of determining what there is that is mind independent. We just figure out what the basic units of matter are and then we can work out what other things there are by *a priori* reasoning about composition. Such an approach makes what there is a mind independent matter and so it must be. For the world is objective, it is (to use Bernard Williams' phrase ((Williams 1978) p. 64) '…what is there anyway'.

Merricks suggests the possibility of a gerrymandered object a 'slithy tove' which he defines as the thing composed of the atoms that make up his ear and the atoms made up of someone else's nose (he dubs this other person P, but we shall name her Pauline Pauline). In fact, any arbitrarily selected collection of atoms would do for his purposes, but let us stick with the Slithy Tove.

Merricks suggests that we could imagine a society where the use of the term 'Slithy Tove' is well entrenched: Where people talk about the Slithy Tove, where there may be laws governing the places that the Slithy Tove is allowed to be, and so forth. People in such a society might well say such things as 'there is a Slithy Tove', and they might ask where the Slithy Tove is, and so on.

Merricks suggests that in such a society a philosopher might claim that there is not really a Slithy Tove, and that people would take the same attitude to him as most people in the real world take to those who argue for the negative ontological claim. We can call this philosopher stMerricks.

The point of Merricks' example is that our object concepts are just that, *ours*. They are subjective in that they are the product of human minds and brains. The example is supposed to suggest that the idea that we can identify what there is by identifying which of our object concepts are satisfied is mistaken: It has (the argument goes) the unacceptable consequence of making everyday physical objects mind dependent (though one might still be tempted to take the line that

it is better for them to be mind-dependent than non existent). We can in fact strengthen the argument in order to frame it as an explicit rejection of the idea (argued for in Chapter Two of this thesis) that if our object concepts are satisfied there are objects.

In order to see how the argument will work we need to compare our world to Slithy Tove world. Physically they are very nearly identical; if there are any differences at all they will be in the physical realisation of mental states required for the inhabitants to think about the Slithy Tove and in changes in the distribution of objects that arise from rules related to the Slithy Tove. None of these sorts of differences would normally be thought relevant to ontology as a whole.

Merricks' argument then can be laid out as follows (see for example (Merricks 2001) chapter 1 section 3):

1) Given the physical similarities between our world and Slithy Tove world, we should suppose that all of the same objects exist on each world: since there is no significant physical difference between the worlds, there should be no object in one world that is not also in the other world.
2) There is no Slithy Tove in our world.
3) People in Slithy Tove world believe that there is a Slithy Tove.
4) Since (from 1) and 2)) there is no Slithy Tove, people on Slithy Tove world believe something false and stMerricks is right.

The conclusion we are supposed to draw is that we are analogous in our attitudes to objects to the way that people on Slithy Tove world are in their attitudes to the Slithy Tove: if their belief in the Slithy Tove is unfounded then so is our belief in everyday objects.

We can also run the argument as targeting explicitly the following claim:

Simple Ontology (SO):   All that is required for there to be an object o is for our object concept <O> to be satisfied.

The argument, so structured, runs as follows:

1) SO: All that is required for there to be an object o is for our object concept <O> to be satisfied   (for *reductio*)

2) Given the physical similarities between our world and Slithy Tove world, we should suppose that all of the same objects exist on each world: since there is no significant physical difference between the worlds, there should be no object in one world that is not also in the other world.

3) There is no Slithy Tove in our world

4) There is no Slithy Tove in Slithy Tove world   (from 2) and 3)).

5) The 'Slithy Tove' concept is satisfied in Slithy Tove world.

6) There is a Slithy Tove in Slithy Tove world   (from 1), and 5))

7) But then there both is and is not a Slithy Tove in Slithy Tove world (from 6 and 4)

This argument is presented here because the response to it helps to clarify a point about the notion of objects that is defended in this thesis and because the argument presents a challenge to the account of objects suggested in Chapter Two.

We might respond to this argument by asking what would happen were a person from Slithy Tove world to be invited to our own world and introduced to Merricks and Pauline. Presumably the person from Slithy Tove world would be just as capable of deploying their concept in our world as in their own. She would be able to claim not just that there is a Slithy Tove in her world, but also that there is one in our own world (she might, for instance, express shock at our lack of rules governing the whereabouts of the Slithy Tove).

The point of this is that the third premise of the *reductio* (and the second premise of Merricks argument as laid out above) is unsupported. In his presentation of his version of the argument Merricks merely assumes that if universalism about composition is not true than it must be the case that there is no Slithy Tove. But why not say just that the Slithy Tove in our world has not been identified as such? The Slithy Tove is, after all, nothing more than an arbitrarily stipulated collection of simples. It does not have the same sort of functional and causal status as an object such as a chair. What is more, we need not have specified the simples to be included in the Slithy Tove in terms of composition; we could just as well have specified it in terms of the 'simples constituting Merrick's ear and Pauline's nose'. The object concept for Slithy Tove as deployed in Slithy Tove world does not require for its satisfaction anything more than the existence of Merricks' ear and Pauline's ear; it is not a particularly substantial concept.

Merricks' basis for not considering this option presumably lies in the way that he initially defined the Slithy Tove. The Slithy Tove as defined by Merricks is that thing composed of the atoms arranged his ear wise and Pauline's nose wise. The important relation for Merricks is composition: he takes it to be the case that there is no Slithy Tove because no one but a universalist would take those atoms to compose something. But we argued in Chapter One that whether composition takes place or not is not what matters in determining whether some everyday object exists. As was argued in Chapter One, there is nothing in the notion of composition appealed to by Organicists to rule out everyday objects being simples. If that is true of other everyday objects, then there is no reason to think it would not also be true for a Slithy Tove. At least, that is the case if we are to take seriously the idea that there could be a valid analogy between the Slithy Tove and everyday objects[98]. At this stage to just claim that

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[98] I.e. If we reject the possibility of Slithy Toves being simple and just stipulate that they are composite, then there is (given the argument of Chapter One) no reason to suppose that one can draw an analogy between the Slithy Tove and everyday objects (which could be simple).

we must assume that this notion of composition is the basis for determining what there is merely begs the question.

Even so, one might think that the example shows that endorsing SO entails that we must accept that objects are mind-dependent or subjective. Some of Merricks' remarks would seem to suggest that this is what he thinks is at issue:

> 'Let me focus on what I think is the fundamental point at issue. I assume that there is an objective fact of the matter about what exists. And I think we use the apparatus of existential quantification—expressions like 'there is', 'there are', and 'exists'—to say what (we believe) objectively exists. But there is nothing magical about 'there is', 'there are', or 'exists'. We control them; they do not control us. So we can use these bits of language however we choose. Thus we could use them 'deviantly', to do something other than describe what (we believe) exists. For example, we could use 'there is an F' to mean we wish there were an F.' (Merricks 2001) p. 18

Merricks goes on to argue that his use of 'there is' (the one which he supposes entails that there are no non-living everyday objects and no Slithy Toves either) is the non-deviant one. The insinuation being that if we endorse SO here we are thereby accepting a deviant meaning for exist (one which allows for the introduction of arbitrary objects). But allowing that there could be a Slithy Tove in both worlds does not commit us to any deviant notion of existence. What determines whether or not the 'Slithy Tove' concept is satisfied is entirely mind independent, what is not (and cannot be) mind independent is the concept itself. This is just as we should expect.

The Slithy Tove argument is presented, in part, as a response to what Merricks terms the 'linguistic charge'. The 'linguistic charge' is the charge that Organicism is somehow self-contradictory because 'there is a statue' just *means* 'there is a statue-wise arrangement of simples'[99].

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[99] Thomasson (Thomasson 2007) has argued that this is not the most plausible version of the linguistic charge. Thomasson develops a notion of 'analytical entailment' whereby one

In objecting to this, Merricks writes as follows:

> 'If the linguistic charge's assumption about the ordinary meaning of 'there is a statue' is correct, 'there is a statue' does *not* ordinarily mean that there is some *x*, such that *x* is a statue. It means, instead, that there are some things, none of which is a statue, in certain arrangements. Thus if the linguistic charge's claim about ordinary meaning is correct, then 'there is' is used deviantly in ordinary occurrences of 'there is a statue'. Eliminativism has nothing to say about such deviancy. Eliminativism claims only that 'there is a statue' is false when 'there is' is being used as a legitimate and straightforward existential quantifier.' (Merricks 2001) p. 18–19

Merricks' point here is this: the semantics of our language require that in order for 'there is a statue' to be true there must be some one thing that is a statue, it is not enough for there merely to be a number of things which do all the things that a statue do. Given the way that he construes the linguistic objection, this is not an unreasonable point for Merricks to make. It has here been argued, however, that we have reason to suppose that whenever we are in a position to say that there is an object-wise arrangement, there is an object-form present which we can treat as the reference of the object-term. Thus, if someone says 'there is a chair', this is true just in case there is a chair-wise arrangement of simples. The novel feature of the position taken here is that we need not think that composition is relevant.

We need not think that what is deviant here is the understanding of existence or the meaning of the words 'there is a'. We can agree on what 'exists' means and on 'there is a', and we can allow for the sake of argument that Organicists might

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statement analytically entails another if, given what both statements mean, the same states of affairs must obtain for one to be true as must obtain for the other to be true. This would be the case for 'there is a statue' and 'there is a statue-wise arrangement' because 'statue-wise arrangement' has been stipulated by Organicists to be true just when we would think that 'there is a statue' is true. Thomasson's formulation of an analytic entailment will be discussed in slightly more detail in Chapter Seven.

be able to demonstrate that statues are non-composite. This would be a surprising fact about statues. It would not show that they do not exist.

We have considered one plausible option for rejecting the Slithy Tove argument, the option of allowing that there could be a Slithy Tove in this world. Another option, which may appeal to sortalists is to suppose that there is a Slithy Tove in Slithy Tove world, but not our own. As has been noted already (see Section 3.3) sortalists already hold that some objects exist only because they were created in given social contexts. If they already hold this, then they should have no compunction about denying premise two of the *reductio* (premise one of Merricks' argument). If they accept that social context is important in establishing what sorts of objects there are there is no reason for them to accept that two worlds which are physically identical (except in terms of the brain-states of its inhabitants) must have the same objects in them. What is more, sortalists are not thereby guilty of any sort problematic idealism: the difference between ST world and our own is not that there is more matter in one than the other, it is just that in one world some of that matter constitutes something that the corresponding matter in the other world does not.

5.4 Object concepts revisited

One of the reasons that the Slithy Tove argument is misleading is because it seems to suggest that there may be something slightly arbitrary about our everyday object concepts. It suggests that the concept of a Slithy Tove stands in just as good standing as the concept of a chair. This though, is not quite right. Although our object-concepts are generated by us, they are not generated arbitrarily or randomly. They are generated in response to stimuli in our environment.

Part of the issue here is what is involved in something's being an object concept. Object concepts are those concepts that pick out things, that in Aristotelian terms, things can be said-of (*Metaphysics Z* in (Aristotle 1984)). That is, object

concepts are those concepts which pick out the bits of our environment of which things may be said, rather than those concepts that merely say things about bits of our environment. As was discussed earlier (in Section 2.2) we have here, in deference to the Organicists, restricted our discussion, for the most part, to object concepts, rather than 'sortal' concepts. Even so, we will need to note that object concepts are not, on the account presented here, just developed arbitrarily. In Chapter Two it was argued that our object concepts are, as a matter of fact, generated in response to collections of regularities in our environment—that is, object forms. In this chapter, I have argued that it is these forms, as caused by object-arrangements, that our object concepts pick out.

We also noted in Chapter Two that in many cases there are social roles associated with objects. We might think that there is a class of objects which are very largely socially determined; that the social role does actually determine that the form caused by some particular collection of matter constitutes a thing of a given kind. Thus, we might think that what makes a particular object form a 'chair' rather than just a 'wooden artefact' is the fact that it has a certain social role[100]. Organicists, while accepting that there are concepts such as this, and social roles, and allowing that these roles are performed, must deny that there are objects which do the performing.

In the previous chapter it was argued that by deploying the O-arranging manoeuvre Organicists commit themselves to there being object-arrangements in our environment that are causally responsible for object forms. They commit themselves to the things necessary, on the account presented here, for there to be everyday objects.

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[100] If one were tempted by this sort of line, however, it would be best to adopt a full on sortalism. From a sortalist position it would not be terribly problematic to suggest that the same object-form constituted more than one object (thus, that the collection of properties constituting a statue also constitute a piece of gold) .

In this chapter we have looked at the consequences of the Organicist thesis for theories about the meaning of our everyday object terms. It has been argued that the Organicist has two options; either ascribe a global error with respect to our normal beliefs about everyday objects or develop an alternative semantics for our object speech and object beliefs. It was argued that both options lead the Organicist to a position where it is hard for them to deny that what our object concepts actually map onto are collections of properties generated by arrangements of simples: object forms. This leads us to the conclusion that, even if we grant the Organicists' thesis about composition our object concepts are still satisfied. In earlier chapters it was argued that the satisfaction of our object concepts is sufficient for the existence of objects, and in the last part of this chapter this claim was defended against one of Merricks' arguments.

The next two chapters will show how the theory of everyday objects developed so far can be used to respond to some of the positive arguments that Organicists have put forward in favour of their position. Two lines of argument that have been advanced by Eliminativists about everyday objects will be targeted. One line of argument is the claim (heavily involving the O-arranging manoeuvre) that everyday objects, if they existed, would be causally superfluous as all the causal work that we attribute to objects is really done by simples arranged in an object-wise fashion. The other argument to be addressed is the argument from utility: the argument that Organicism does better at dealing with puzzle cases (such as the Ship of Theseus and the Sorites puzzles) about everyday objects than other theories of everyday objects. I will argue that the best they can claim is that they do as well as other theories, and that therefore the benefits they claim to enjoy in relation to these puzzles are in fact misappropriated.

Chapter Six: The overdetermination argument for the elimination of everyday objects

So far in this thesis I have presented a positive argument against the Organicists' negative ontological claim. I presented two lines of argument. Firstly, I argued that Organicists are not able to draw the ontological conclusions that they want to on the basis of the notion of composition that they have at their disposal. Secondly, I argued that our object-concepts are, in the only way they can be, satisfied and that this gives us reason to conclude that there are objects. In the last two chapters we saw the role of the O-arranging manoeuvre in making the Organicist position a plausible addition to ontological debate, and I argued that by deploying the O-arranging manoeuvre Organicists commit themselves to just those conditions that I argued in earlier chapters are required for the existence of objects.

In this chapter and the next we will address some of the positive arguments for the Organicist position. It might seem a little unusual to leave the discussion of the positive arguments of one's opponents this far into the thesis. Here it has been done for two reasons. Firstly, in the case of Organicism to actually address the arguments discussed in this chapter is to concede something. It is to acknowledge that the O-arranging manoeuvre is effective enough that the self-evident falsity of the Organicists' position has been mitigated. One thing that Organicists claim about their position is that it does a better job of dealing with the traditional philosophical puzzles about everyday objects (such as the sorites paradox and the Ship of Theseus paradox) then other theories do, but this claim is only worth testing if their position gets off the ground at all. If this thesis is correct, then one might think that the Organicist position is not strong enough

to pass this test. Secondly, it was necessary to establish the positive theory of objects presented in Chapters Two and Three in order to provide the tools for showing why the Organicist arguments discussed in this section are unsound.

Two lines of Organicist argument will be discussed in this chapter and the next. This chapter discusses the argument from over-determination that constitutes Merricks' master argument for the negative ontological claim. The next chapter will discuss the claim that Organicism does better at dealing with 'the puzzles' then other positions with respect to ontology. The point of this chapter and the next is not to refute these arguments so much as to show that, given the arguments presented in this thesis, the argumentative burden still lies with the Organicist.

6.1 The argument from overdetermination

In Chapter three of *Objects and Persons* Merricks presents his master argument for Eliminativism with respect to non living everyday objects[101]. Merricks takes the O-arranging manoeuvre, together with the traditional puzzles concerning everyday objects to give us reason to be agnostic about the existence of everyday objects (see (Merricks 2001) p.73). The argument from overdetermination is supposed to give us reason to exclude them from our ontology.

The basic idea of the argument from overdetermination comes from the 'no causal difference' claim discussed in Chapter Four. That claim was that if there were no everyday objects the distribution of causal properties through the world would be unaffected. It is made plausible by the O-arranging manoeuvre. The argument is that since everything that we take objects to be causally responsible for is actually the causal responsibility of simples arranged object-wise, objects are, in themselves, causally superfluous. The conclusion drawn is that since

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[101] In the remainder of this chapter we will need to remember that Merricks does not take his exclusion argument to apply to people.

objects are not causally efficacious, we have reason to remove them from our ontology; that is, to conclude that they do not exist.

Merricks is not the only person to argue in this way. Cian Dorr (Dorr 2002) also advances a version of the overdetermination argument. Dorr's is a more thoroughgoing Eliminativism about everyday objects than Merricks'. Dorr argues that there is nothing beyond simples, thereby excluding from his ontology those composite objects which Merricks includes, that is, living things. Dorr seeks to make this plausible with a 'fictionalism' about everyday objects[102].

Dorr's fictionalism depends upon a version of the O-arranging manoeuvre whereby it is held to be the case that there is an O-wise arrangement iff it is 'true in the fiction' where there are composite objects that there is an O. The idea is that there is a distinction to be drawn between the conditions under which statements about everyday objects are correct, where this comes to something like 'acceptable assertions given the linguistic standards of the language speaking community' and the conditions under which such statements are 'true'. To make sense of this we can say that 'correct' statements about everyday objects are true 'in the fiction' that there are composite objects.

As we shall see, the details of Dorr's and Merricks' arguments are slightly different. What they have in common is that they take it i) that the properties of macroscopic objects are overdetermined by microscopica; ii) that if this is the case, then objects are epiphenomena; and iii) that if macroscopic objects are epiphenomena then this provides sufficient reason to conclude that there are no macroscopic objects.

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[102] For a more recent development of his position, see (Dorr, 2005).

Merricks argument is as follows:

1. 'Object O—if O exists—is causally irrelevant to whether its parts $P_1 \ldots P_n$, acting in concert, cause effect E.
2. $P_1 \ldots P_n$ cause E.
3. E is not overdetermined.
Therefore,
4. If O exists, O does not cause E' ((Merricks 2001) pp. 79–80)

We will see below that causal exclusion arguments such as this are generally filled out in terms of two distinct causes being sufficient to cause the same effect. In this case, Merricks is trying to use the notion of 'causal irrelevance' to do the work that causal sufficiency does for others[103]. This use of 'causal irrelevance' will be discussed below.

This then is Merricks argument to the conclusion that everyday objects are epiphenomena. If the parts of an object cause an effect, and the object itself is not relevant to their so doing, then the object is an epiphenomenon. He takes this to be sufficient reason (given the O-arranging manoeuvre) for us to conclude that there are no non-living objects. To reach this conclusion one has to suppose that overdetermination is a problem; that if objects and their parts overdetermine their macroscopic effects that this means that we should eliminate one or other of them from our ontology.

Dorr also argues that objects and their parts over-determine their effects. His argument, by contrast with Merricks', does not make explicit use of any sort of notion of 'causal irrelevance'. It runs as follows[104]:

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[103] The causal exclusion argument in the philosophy mind is usually premised on the completeness of physics. The point being that if physical causes are sufficient explanations for all events, then mental causes appear superfluous. For discussions of this see, e.g. (Papineau 1990), (Crane 1995).

[104] I have changed the way that simples are referred to, to bring them in line with van Inwagen's terminology and that of the rest of this thesis, otherwise this is a quote from (Dorr 2002).

'P1   If the *x*s had been arranged as they actually are but composed nothing, all the microphysical facts would have been just as they actually are.

P2   If all the microphysical facts had been just as they actually are, and the *x*s had been arranged as they actually are but composed nothing, then everything else would have been just the same.

C1   So, if the *x*s had been arranged as they actually are but composed nothing, everything else would have been just the same.

P3   If C1 is true, then the thing the *x*s compose is an epiphenomenon.

C2   So the thing the *x*s compose is an epiphenomenon.'
((Dorr 2002) pp. 42–43)

The idea here is that as the world would be causally just the same even if there were no objects, objects must be superfluous.

The arguments, while differing in detail, nonetheless have a good deal in common. They both rely on the idea that whatever causal effects we attribute to objects could really be attributed to the collective action of their parts. Merricks and Dorr go on to argue that this sort of overdetermination would be sufficient reason to conclude that there are no objects.

It is worth considering then, whether or not it is in fact the case that 'overdetermination' would be problematic for everyday objects, and if it would, whether there is anything that someone who wished to defend everyday objects could say in response to people deploying causal exclusion arguments.

Sider (Sider 2003) argues that we should grant that over-determination takes place, and then question what is wrong with this sort of overdetermination. He canvasses and rejects three reasons for supposing over-determination to be objectionable, which he terms the 'metaphysical objection', the 'coincidence objection' and the 'epistemic objection'. Of these, only the 'epistemic' objection seems to be a contender for being the source of the Eliminativists' worries.

The 'coincidence' objection is that if epiphenomenal-objects' effects are over-determined by the effects of their parts, it would be a striking coincidence that the epiphenomenal-objects went everywhere their parts went and did everything that their parts did. If anyone has argued this in the case of everyday objects, then Sider is right to say that this is a bad argument. The 'coincidence objection' is not a good reason to reject epiphenomenalism. The problem with epiphenomenalism is not that it makes it 'coincidental' that objects do the same things as their parts. Even positing the sorts of causally inert objects that Merricks and Dorr seem to be suggesting that we are committed to if we believe in everyday objects, it would not be a coincidence that they do the same things as their parts. As Sider remarks:

> 'It is no coincidence that baseballs and their parts, or mental and physical events, are correlated, given the necessary truths governing these correlations' (Sider 2003)

This though, is not the basis of either Dorr's or Merricks' objection to overdetermination.

The 'metaphysical objection' is supposed to be that there is something metaphysically incoherent in thinking that there are epiphenomenal objects. Sider argues that it is not 'metaphysically incoherent' to suppose that objects and their parts both cause the same effects. He suggests that this 'metaphysical objection' depends upon an unsatisfactory metaphor for causation that treats it as a kind of fluid that can be 'used up'. As he notes, we can treat either objects or their parts as the causal relata in any of the contemporary accounts of causation[105]. As Sider notes ((Sider 2003) p. 3), we can fit either a ball, or its parts equally well into any of the contemporary theories of causation. In terms of fitting them into a counterfactual analysis[106], for instance, there seems little to choose between the claim:

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[105] It is natural given the view of properties assumed in this thesis to take property instances or tropes as the causal relata. See, for instance (Whittle 2003).

[106] See (Lewis 1973) for a defence of the counterfactual theory of causation.

> 'The window would not have broken had it not been hit by the ball'

And the claim:

> 'The window would not have broken had it not been hit by the atoms arranged ball-wise'.

This objection too though appears to be something of a straw-man.

What Sider refers to as the 'epistemic objection' is the claim that 'we have no reason to believe in overdetermining entities'. The idea behind this objection is that unless objects are independently causally effective, there is no reason to posit them. We can, therefore, apply Ockham's razor in order to eliminate them. Sider concedes that this is not in itself an unreasonable argument, but suggests that it only counts as a response to the argument that we should posit everyday objects because they are causal relata; that they are needed as the causal ground of our experiences. It is not, according to Sider, in itself a reason to reject the existence of objects. From Sider's theoretical position this is no doubt true[107]; he defends a Universalism with respect to objects and offers theoretical arguments in support of it (see (Sider 2001)). If such is your theoretical starting position, then you already believe that any collection of simples will compose something and it will seem obvious that whether or not they are causally effective will be irrelevant to this (though it is not obvious that every day objects are what they compose[108]). Nonetheless, the over-determination argument does present a challenge for the position argued for in the current thesis. In the remainder of this chapter we will examine what is wrong with the over-determination argument for the non-existence of objects.

Ockham's razor tells us not to posit entities beyond those necessary. What the over-determination argument does is give a criterion for determining what

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[107] Though see (Merricks 2003) for his response to this argument.

[108] Unger can be read as arguing that there are physical objects, but that none of them are suitable for satisfying our object concepts (see (Unger 1979) and (Unger 1980)), this is noted in (van Inwagen 1990) p. 73.

things are 'necessary' and what things are not necessary[109]. What Merricks argues for is the application of Ockham's razor to the question of everyday objects, and as he notes, these *are* the sorts of things that we would expect to be causally effective. His target here is not the Universalist, who has already given up 'folk mereology' and holds counterintuitive views about objects, but someone who has something like a pre-philosophical conception of objects. The argument rests in part on a sort of constrained principle of sufficient causes ((Kim 1989) makes a similar point):

Principle of sufficient cause: If A is sufficient to cause E, then B (such that A≠B) is not necessary to cause E

Since objects are the sorts of things that would be causally efficacious if they existed, this principle, if correct, would be a plausible way to give content to the 'beyond necessity' part of Ockham's razor. If it is correct then it would be appropriate to eliminate everyday objects from our ontology if there were other entities in existence which were sufficient to cause everything that they cause.

The principle of sufficient cause, however, is clearly not correct. The condition that B is not identical to A is far too unrestrictive. Consider for instance a cricket ball causing a window to break. Suppose A to be the ball, and B to be a segment of the ball that takes in three quarters of the mass of the ball. A is not identical to B, but it may well be that B is none the less necessary in order for the window to break. To make the principle of sufficient cause plausible we would need to strengthen it with a notion of independence:

Strong Principle of sufficient cause: If A is sufficient to cause E, then B (such that A and B are causally independent) is not necessary to cause E

[109] See (Kim 1989)

Now however, we have a notion of causal independence built into our principle of sufficient causation. As we shall see shortly, this notion of 'independence' is the key to evaluating arguments from over-determination[110].

Both Merricks' argument and Dorr's take their inspiration from the sort of over-determination arguments that philosophers of mind (see (Kim 1989) and discussions in (Papineau 1990) and (Crane 1995)) use against overdetermination of the mental. The original idea there, as developed in (Kim 1989) is metaphysical and applies to the apparently systematic way that behaviour can be ascribed both mental and physical causes. It is that two separate causal explanations of the same explanandum, where one (or both) of the explanations is by itself sufficient to account for the explanandum, must tend either to collapse into each other or to be mutually exclusive. One way for explanations to collapse into each other would be for it to turn out that the things referred to in each of the explanations were not really independent of each other; that what were taken to be separate causes were really the same cause.

In the mental case we can illustrate (slightly simplistically) how such an argument might go. Suppose that there is some piece of behaviour B that requires explanation. There might be an explanation of B in terms of neurological states N, and another explanation of B in terms of the propositional attitudes P that we normally ascribe to people. The suggestion is that if the behaviour can be explained wholly in terms of the neuralogical states, then there is no work for the explanation in terms of beliefs to do. It might be, however, that there is an explanation which unifies both of these available explanations, by, for instance, showing how the propositional attitude states are related intimately to neurological states. In that situation, we would have one explanation rather than two.

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[110] See (Bennett 2003), for a discussion of the exclusion problem concerning mental causation which reaches a similar conclusion.

Dorr's and Merricks' claim is that there cannot be two causes for the same effect, and that if there were objects as well as their parts then there would be two causes for almost any effect we cared to name. As in the case of explanatory exclusion, however, we must hold that any principle of causal exclusion must include some notion of independence; that two causes being attributed to an effect only over-determine it if they are *in fact* independent.

Both Merricks' and Dorr's arguments then must be consistent with and depend upon the following plausible principle or risk turning out straightforwardly invalid:

No-overdetermination: It is never the case that one effect has two independent causes

They have to depend on this principle because a version of the principle of sufficient cause that does not build in the 'independence' clause is simply implausible given the sorts of things that we are talking about. Certainly, we can think of events of a kind that have two or more interrelated causes[111] (though clearly much will depend here on what we mean by 'independent'). Just to be clear, the point here is not that Merricks and Dorr do in fact appeal to such a principle, but rather that without it their position is not plausible.

As we shall see below, Dorr needs no-overdetermination in order to make his premise P3, plausible. Without it there is no reason to think that the thing composed by 'the *x*s' would be epiphenomenal; both the composite object and the parts could be responsible for the way things are. Merricks seems to accept the need for some sort of independence requirement. It is this that Merricks'

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[111] To use a sporting example, we might suppose that a particular try in rugby has a number of related causes, including the speed of the winger who caused it and the fact that a dummy runner, knowing about the speed of the winger and seeing what was happening caused the defenders to go the wrong way…

notion of 'causal irrelevance' is supposed to be capturing. He offers us the following as sufficient conditions for an object O's being causally irrelevant to whether some simples ('the *x*s') cause an effect E:

> 'O is not one of the *x*s,
> O is not a partial cause of E alongside the *x*s,
> none of the *x*s cause O to cause E, and
> O does not cause any of the *x*s to cause E'
>
> (Merricks 2001) p. 58

While these conditions would be sufficient to rule out the of a ¾ ball over-determining an effect ascribed to a whole ball, in what follows it will be argued that these conditions are not sufficient for causal independence and that under any plausibly relevant notion of causal independence, objects are not independent of their parts.

So what is involved in being causally independent? I argued above that in order for a claim that some event is over-determined (and therefore that one of the causes is epiphenomenal) to be reasonable, we have to be able to show that the two causes do not, under scrutiny, turn out to be either identical or so closely related as to be not really distinct. In addition we have to show that they are not in fact 'partial causes' of the same effect.

Merricks' (p. 57) notion of 'causal irrelevance' seems to be required to do similar work. Otherwise, we might ask what it is doing in his argument. Why, for instance, would he not just argue as follows:

> M1. $P_1 \ldots P_n$ cause E.
> M2. E is not overdetermined.
> M3. If $P_1 \ldots P_n$ cause E and E is not overdetermined, then If O exists, O does not cause E

Therefore,

> M4. If O exists, O does not cause E

Premise M3 (like Dorr's premise P3) would require an assumption of what we above termed 'no-overdetermination' in order to make it plausible. We can charitably see the introduction of the notion of causal irrelevance as an attempt to make this assumption explicit. If this is the case however, it fails. It fails because it is question begging.

Merricks fits his conditions for causal irrelevance into the causal principle that underwrites his version of the argument from over-determination:

> *'Causal Principle.* Suppose: O is an object. The xs are objects. O is causally irrelevant to whether the xs, acting in concert, cause a certain effect E (i.e. O is not one of the xs, O is not a partial cause of E alongside the xs, none of the xs cause O to cause E, and O does not cause any of the xs to cause E). The xs, acting in concert, do cause E. And E is not overdetermined. It follows from all this that O does not cause E.' ((Merricks 2001) p. 58)

The problem is that upon reflection no one who supposes that macroscopic objects cause things to happen is likely to accept these conditions as sufficient for causal irrelevance. They are unlikely to accept them precisely because they do not, in fact, capture the sort of independence we think is necessary for two causes to overdetermine an effect. To see this, compare Merricks' list, with the following one:

> O is causally irrelevant to whether the xs cause E iff:
>> O is not one of the xs,
>>
>> O is not a partial cause of E alongside the xs,
>>
>> none of the xs cause O to cause E,
>>
>> O does not cause any of the xs to cause E, and
>>
>> It is not the case that the actions of the xs give rise to the object-form of O[112]

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[112] See Chapter Two for a definition of 'object form'.

This last condition seems like a perfectly plausible addition to the sufficient conditions for causal irrelevance. The least that can be said is that the relationship between the matter that gives rise to objects and the objects themselves is intimate enough to throw the plausibility of an 'independence' claim in to question. We might go further, and suggest that it is always going to be implausible to suppose that an object and its parts (if you go in for that sort of thing) or an object and the matter that it is causally dependent upon could be regarded as two separate causes of a particular event.

Thomasson ((Thomasson 2007) pp. 17–20) puts some effort into responding to Merricks' charge of over-determination. She too targets Merricks' notion of 'causal irrelevance'.

Thomasson argues that the independence condition fails in the case of everyday objects, and that this is an instance of a more general phenomenon. Her claim is that an object's causing some effect E analytically entails its parts causing E and vice versa.

She introduces the notion of an analytic entailment as follows:

> 'I use the expression 'analytically entail' to mean 'entail in virtue of the meanings of the expressions involved and rules of inference', so that a sentence (or set of sentences) φ analytically entails a sentence ψ just in case, given only logical principles and the meanings of the terms involved, the truth of φ guarantees the truth of ψ.' (Thomasson 2007) p. 16

Thomasson's book features an extended defence of this notion of analytic entailment. Analyticity here is clearly being thought about in terms of 'truth grounded in meanings independently of matters of fact' (Quine, 1951), as was famously criticized by Quine. Thomasson expends a significant number of words responding to the Quinean critique. It is worth noticing that the account Thomasson gives does not require that we understand sentences or groups of

sentences that analytically entail each other to be synonymous, or to be defined in terms of each other. Rather it relies on the meanings that the words actually have in natural language.

In the case of objects and their parts over-determining some event, the claim that there is an analytical entailment of some kind along these lines is at least plausible. Take the sentences:

A: The cricket ball broke the window

And

B: The parts of the cricket ball, acting together in the way that parts of cricket balls are wont to, broke the window.

Clearly these sentences are not synonymous, or even necessarily an analysis of each other. We might nonetheless suppose that if A is true that we can infer the truth of B. Similarly, we can infer on the basis of the truth of B that A is true. These are plausible claims, and Thomasson points out why ((Thomasson 2007) p. 16). As she puts it A 'requires no more of the world' than B does. The same causal process needs to take place for either sentence to be true[113].

Thomasson's position has much to recommend it and is in broad terms consistent with the position adopted in this thesis. One might suppose that treating statements about objects as analytically entailing statements about their parts might conflict somewhat with the line taken in Chapter One of this thesis to the effect that parthood is not what matters in ontology. The argument there however was not that we have no sensible notion of parthood, but rather that i) if we *have* to make a choice we would do better to revise our account of what things have parts than to conclude that there are no everyday objects and ii) that the notion of parthood appealed to by Organicists (and other compositional

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[113] Which, we might recall from Chapter Four is something that van Inwagen at least, seems constrained to agree with.

ontologists) gives no reason to reject the idea that objects are simple. These claims are compatible with our accepting that non-living everyday objects do in fact have parts.

The theory of objects presented in this thesis though offers sufficient resources to challenge the claim that objects are epiphenomenal. We do not need to appeal to analytic entailment in order to accept the general point that objects are not (on any reasonable account of independence) independent of the matter which constitutes them. All we need is the plausible supposition that overdetermination is only a problem if what is posited are two independent causes. What we need is a notion of dependence that makes objects and the simples which constitute them less than causally independent. Thomasson's notion of analytic entailment does this, but so does the account of objects presented in Chapters Two and Chapter Three of this thesis.

The account of objects presented here was as follows: our object concepts are satisfied by object forms which are the causal result of the structures that organize the simples in arrangement-formations. Since the object and its constituent matter are intimately related, it seems very difficult to suppose that under any plausible principle of causal independence they would come out as causally independent. Strictly speaking the position that has been advanced here does not require that we treat the matter in an arrangement-formation that gives rise to an object-form as thereby composing an object; we need not accept that those bits of matter are 'parts' of the object. We could treat the object form as a simple whole, constituted by the properties that are the result of the relations between the simples that participate in the arrangement-formation. This is sufficient to license the conclusion that the bits of matter causally implicated in the effects of an object are not causally independent of that object under any non-question begging account of independence.

Assuming that we take E to be the breaking of a window by O, a cricket ball, none of the parts, p_1 to p_n, of O are individually sufficient to cause E. The 'parts'

are only able to cause E because of the relations in which they stand to each other. Because of these relations they generate the coordinated macroscopic properties that ground our object concepts. There is no more to the object than this. Under any reasonable understanding of what goes on when you chuck a cricket ball at a window, we need not suppose that the 'ball' is some entity in addition to the object form. If you accept the functionalist intuition presented in Chapter Two, the fact that the arrangement-formation exhibits the properties of a cricket ball is sufficient for the existence of the cricket ball. The object on this account is *not* causally independent of the arrangement-formation which is its causal base.

We have then, plenty of reason to reject the argument from overdetermination. In the next chapter, we will discuss briefly how we ought to respond to Organicists' claims about the puzzles concerning everyday objects given the claims made so far in this thesis. Before moving on to that chapter though, we will return to Dorr's argument. It is worth making explicit how the aforementioned considerations affect Dorr's argument. In what follows, Dorr's argument will be reconstructed in order to show how it depends on an assumption of No-Overdetermination. It will then be noted that if we add the premise that there are everyday objects to the first part of Dorr's argument we are in a position to offer another argument to the conclusion that composition is not what matters in ontology.

We laid out Dorr's argument earlier (see page 192). Here are the first two premises again, along with Dorr's first conclusion:

'P1   If the *x*s had been arranged as they actually are but composed nothing, all the microphysical facts would have been just as they actually are.

P2   If all the microphysical facts had been just as they actually are, and the *x*s had been arranged as they actually are but composed nothing, then everything else would have been just the same.

C1   So, if the *x*s had been arranged as they actually are but composed nothing, everything else would have been just the same.'

In the original version of the argument Dorr then argues as follows:

'P3   If C1 is true, then the thing the *x*s compose is an epiphenomenon.

C2   So the thing the *x*s compose is an epiphenomenon.'

However, in the foregoing we argued that P3 is only plausible if we take it to be modified by something like the principle of no-overdetermination. We then argued that the reasons we have for supposing that objects are not causally independent of their parts apply here as well.

The claim then, is that in order to get from 'if the *x*s had been arranged as they actually are but composed nothing, everything else would have been just the same' to 'the thing the *x*s compose is an epiphenomenon' we need an additional argument which allows us to assume the principle of no-overdetermination. To this end then, we add no-overdetermination as an assumption:

Assumption (No-overdetermination): It is never the case that one effect has two independent causes

In the light of this, we need to include a premise in Dorr's argument to make this assumption explicit. That is, we need to include a premise to the effect that the *x*s and the thing they compose are causally independent. We then get the following argument:

1) The thing(s) that the *x*s compose is causally independent of the *x*s

2) (C1) 'if the *x*s had been arranged as they actually are but composed nothing, everything else would have been just the same'

3) If C1 and the thing that the *x*s compose is causally independent of the *x*s, then the thing that the *x*s compose is an epiphenomenon

4) The thing that the *x*s compose is an epiphenomenon

This then, is what Dorr's argument would look like if the independence assumption were made explicit. However, clearly given the earlier discussion we should conclude that this argument fails to go through because 1) is false. Both Merricks' and Dorr's arguments fail for the same reason.

We have seen that both Merricks' and Dorr's arguments fail for similar reasons. They fail, because they are only plausible if objects and their parts are taken to be causally independent, and objects are clearly not causally independent of their parts.

To close off this chapter, however, an argument will be suggested that is based on Dorr's argument (P1 to C1 are directly quoted). The argument is for the conclusion that composition is irrelevant to whether or not there are everyday objects. Consider Dorr's argument as laid out above, but add an additional premise to the effect that there are everyday objects:

> P0   There are everyday objects
>
> P1   If the xs had been arranged as they actually are but composed nothing, all the microphysical facts would have been just as they actually are.
>
> P2   If all the microphysical facts had been just as they actually are, and the xs had been arranged as they actually are but composed nothing, then everything else would have been just the same.
>
> C1   So, if the xs had been arranged as they actually are but composed nothing, everything else would have been just the same.

Then, rather than argue as Dorr does to the conclusion that objects are epiphenomenalism, we can argue as follows:

> P3*   If P0 and C1, then whether the xs compose something is irrelevant to whether there are objects.
>
> C2*   Whether the xs compose something is irrelevant to whether there are objects.

Given the foregoing, P3* seems fairly reasonable, and therefore C2* follows. Thus, we have an argument to the conclusion that composition is not what matters in determining whether there are everyday objects. While we should not put too much weight on this argument, it does serve to illustrate how the No-Difference claim encountered previously (the claim that a world without composite objects would be no different from one in which there are composite objects) could be viewed as a double edged sword. If rather than taking No-Difference as a reason to reject the existence of everyday objects we hold on tight to the existence of everyday objects, then what the No-Difference claim gives us is a reason to worry about the notion of 'composition' that is being appealed to. If 'composition' really makes no empirical difference, then we should be dubious about drawing sweeping conclusions about ontology on the basis of *a priori* reasoning about it.

Chapter Seven: Organicism and puzzles about everyday objects

One thing that Organicists claim weighs in favour of their position is its purported ability to do better than other positions with respect to the traditional puzzles about everyday objects; puzzles such as the sorites paradox, the problem of the many, and the Ship of Theseus. The basis of this purported advantage is simple: If there are no everyday objects than these puzzles do not arise.

The status of this claim to theoretical superiority is slightly different for Merricks and van Inwagen. For Merricks, the ability to deal with these puzzles is a useful supporting argument to the argument from overdetermination. For van Inwagen, it is (as becomes clear towards the end of *Material Beings*) in fact the central argument for his position. Van Inwagen's dialectic in *Material Beings* is as follows: In order to find out about what there is we need to know about composition, as the General Compositional Question is unanswerable we should focus on the Special Compositional Question, Organicism is the best answer to the Special Compositional Question because it gives the best systematic account of everyday objects. One of the reasons that it is the best systematic account of everyday objects is that it does the best job at dealing with the puzzles.

The strategy of this thesis has not been to challenge the efficacy of Organicism in treating the philosophical puzzles about everyday objects. Rather, it has been to question the theoretical basis for asking the Special Compositional Question in the first place and for thinking that answers to it have the sort of significance for ontology that Organicists suppose it to have. We have argued that the method for finding out what sorts of objects there are must involve some

element of empirical investigation (beyond finding out whether or not some lump of matter is alive or not). The point of this thesis has been that by the time you enter the Organicist position onto the theoretical scales against other positions you have already conceded something to the Organicists.

Given this, this chapter will be shorter than might otherwise have been expected. The purpose of this chapter is not to address the puzzles, or even to argue that the Organicist cannot deal with them. Rather, the aim is to examine two puzzles as exemplars, and clarify where the burdens of proof lie for the Organicist. All that is claimed is that even if we granted an Organicist ontology, dealing with the puzzles is not so simple as saying that since everyday objects do not exist the puzzles do not arise[114].

In this chapter we will briefly discuss two puzzles, the sorites and the Ship of Theseus. The Ship of Theseus is one of the puzzles which van Inwagen makes the strongest case for being able to deal with, and the sorites is appealed to by Merricks' as giving supporting evidence for the Organicist position.

7.1   *The sorites paradox*

The sorites paradox as applied to objects can be developed as follows:

1)   A chair, C is composed of at least some atoms, but not an infinite number of atoms.

2)   For any chair, if one atom were removed, the chair would still exist[115].

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[114] For an alternative way of arguing to the same conclusion see (McGrath 2005). McGrath gives an account of what it would be for sentences to express factual contents that are neutral between Eliminativist paraphrases and the original sentences, and then argues that if the van Inwagen style paraphrases are interpreted as expressing factual statements that puzzles about composition remain puzzles.

[115] This way of formulating the paradox can be found in (Unger 1979)

Through repeated iterations of the second premise, the number, n, of atoms composing the chair is reduced, one at a time. Entailing, eventually, the following two conclusions:

3)   C would still exist even though only one atom remained.
4)   If that atom was removed, then C would still exist.

One solution for this paradox is to simply reject premise 1). Organicists have a principled reason for doing this as they do not suppose chairs to exist. Since they accept that there are no chairs they are justified in supposing that the claim that chairs are composed of a finite number of atoms is false.

There are a number of points that we can usefully make with respect to the Organicists position with respect to the sorites:

Firstly, this is what Schiffer terms a 'happy face' solution to the sorites paradox: it dissolves the paradox by rejecting one of its key elements[116]. But we might think that in doing so it merely moves the troublesomeness of the paradox elsewhere. We can imagine an interlocutor accepting that there are no everyday objects, but still worrying about when some simples are arranged chairwise and when they are not. To be sure, when we discuss chair-wise arrangements it is clear that the question is linguistic—it is about the application of our chair concepts, but since van Inwagen argues that he must allow vague existence in any case (see (van Inwagen 1990) Section 19) it is not clear that there is much gain here.

Secondly, it should be clear that in at least one respect Organicists do not do as well as a pure nihilist such as Cian Dorr with respect to this argument. It is quite

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[116] See (Schiffer, 2003) p. 68. In Schiffer's parlance a paradox is a set of mutually inconsistent propositions such that we have good reasons to believe each of them individually. A happy face solution to a paradox shows either that the propositions are not really inconsistent and explains why, or shows that one or more of the propositions is false and explains why we thought them true.

clear that if one were to apply the sorites argument to a gerbil it would go through just as well for the hapless gerbil as it does for a chair. Almost any problem that we can pose for everyday objects can be adapted to hold for organisms. Van Inwagen acknowledges this and the second half of *Material Beings* shows how van Inwagen thinks the nature of Organicism helps solve puzzles. Merricks accepts that the sorites argument applies to people, but argues that while it gives a reason to eliminate statues it does not give a reason to eliminate persons (see (Merricks 2001) p. 125). The issue here is whether or not the Organicist position furnishes its proponents with resources for approaching this problem that their opponents cannot access, and whether these extra resources really do a better job at dealing with the sorites paradox. If they do, then this will be because of the account that Organicists can provide of what is involved in something's being a life. That is, it will depend on the details of their positive ontological claim. The way that they do this will not be discussed here, but it is worth noting that this is an argumentative burden that they must bear.

Finally, we can note that the sorites paradox as applied to objects is in fact an instance of a wider problem. The problem is that of vagueness, and it arises in many areas. It arises, for instance, in the case of colour continua[117]. Take this colour continuum for instance:

Figure 1: a colour continuum

If we take a thin strip of colour on the left hand side of the continuum, and term it C, then we can construct a sorites style case that is similar in structure to that presented above concerning objects:

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[117] Though there are features of continuum cases which might distinguish them from other sorites type problems. See for instance (Graff 2001) for a discussion of colour continua cases.

1) A colour patch, C, is black (but is a finite number of imperceptible colour brightenings from being white).

2) For any black colour patch, if it were made brighter, but imperceptibly brighter, it would still be black.

Through repeated iterations of the second premise, the brightness of the patch is increased, one imperceptible increment at a time. Entailing, eventually, the following two conclusions:

3) C is black even though it is one imperceptible colour brightening away from being white.

4) If C were made imperceptibly brighter, then C would be white and C would be black

In fact, sorites style paradoxes are, at least somewhat, ubiquitous. We can create similar style problems with classic vague predicates such as 'bald' but also many predicates that can be applied in different degrees, such as 'shiny', or 'hard'.

The fact that sorites style reasoning can be applied to so many cases in addition to the sorites of everyday objects introduced above is problematic for Organicists for two reasons. Firstly, it means that the theoretical benefit of solving the problem for everyday objects is limited— in simply accepting the sorites as a *reductio ad absurdum* on the existence of everyday objects, they have not offered us a general solution to vagueness. If such a solution were to be found it might be thought that it would solve the sorites as applied to everyday objects too. Secondly, the parallel argument developed above for the continuum case suggests that merely accepting the paradox as a *reductio ad absurdum* on the existence of objects will only be a viable strategy if one can also show why parallel reasoning should not be applied to other sorites style cases.

To be sure, Merricks argues that the sorites as applied to everyday objects is in some way more problematic than other sorts of vagueness; he maintains, for

example, that Epistemicists[118] (who hold that there are sharp boundaries demarking the application of vague predicates but that these are unknowable) should worry more about the sorites applied to objects than, for instance, a sorites concerning when someone is bald. The argument appears to be as follows: Either the vagueness involved in the sorites of everyday objects is metaphysical, which we should reject[119], or it has a linguistic basis. Merricks takes Epistemicists to hold that vagueness has a linguistic basis and advances the following argument against all 'linguistic' accounts of vagueness. (His initial presentation of the sorites puzzle is in terms of a statue, 'David', which is subjected to atom by atom dismantling at the hands of god):

> 'I believe that every plausible linguistic account of vagueness—and thus epistemic versions thereof—requires there to be, in some sense, equally good candidates either for what a vague predicate might mean or for what a vague name might refer to. For example, if the vagueness of baldness is rooted in 'bald', then there are many properties that are, in some sense, equally good candidates for being expressed by 'bald'.
>
> But if *David* exists, then—given the assumption noted above and to be defended in the next section—there are not multiple equally good candidates for being referred to by '*David*'. So linguistic accounts of *David*'s vague persistence cannot find a foothold.'
> (Merricks 2001), p. 34

Should we accept that the sorites applied to everyday objects is a special case[120]? If we are to accept that, then we will need a better argument then this.

The assumption mentioned in the quote is the assumption that objects are not collocated. Merricks' idea seems to be that by removing atoms one at a time from a statue we have a series of arrangements each a bit smaller, and that in

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[118] See (Sorensen 1988; Williamson 1994).

[119] He references (Evans 1978).

[120] Van Inwagen does not: he is quite explicit that vagueness applies to organisms. He argues that metaphysical vagueness is in fact acceptable.

order for a linguistic response to vagueness work, these would each have to constitute individual entities that could be the referent of the term 'David' and that are initially co-located. This is clearly not a plausible requirement on an Epistemicist position. Why should an Epistemicist accept the claim that she needs equally good candidates for a name to refer to? All she needs to be able to do is to give an argument for why it is that we do not know when the name 'David' stops referring to the thing in front of us. The essence of the Epistemicist position is not linguistic it is epistemic. Epistemicists respond to the sorites paradox as laid out above by denying the second premise. According to the Epistemicist there is a last atom the removal of which will destroy the chair and there is a last 'black' colour patch. The point is just that we cannot know which atom, or which colour patch that would be. There is no requirement in the position for different candidate things to be potential referents of the term 'black' or 'chair'. The Epistemicist claim can be filled out in linguistic terms as the claim that our predicates have sharp boundaries but that we are unable to know them, but there is no reason why they should accept the existence of distinct entities that are possible referents of our object terms.

Merricks' objection might hold better against a supervaluationist account of vagueness. The supervaluationist account is more clearly linguistic in that it is an account of the truth values of sentences. The account suggests that any 'vague' sentence can be made precise in a number of different ways. That is, that we can give a number (if necessary a large number) of stipulative precisifications of the sentence. Thus, on some precisifications of 'tall' someone who is 5'8" would be 'tall', and on some he would not. Having allowed that there are various ways of precisifying a sentence, the supervaluationist is then able to define 'super-truth'. A sentence is held to be 'super-true' iff it is true on all precifications and 'super-false' iff it is false on all precisifications. The supervaluationist claim is then that a sentence is true if and only if it is 'super-true', and neither true nor false if it is true on some precisifications but not on others. The purported advantage of the position is that it provides the basis of a logic for vague sentences which is consistent with classical logic (see (Fine 1975) for a technical development of

the position[121]). This account then, does require that there are different ways of making a sentence precise, or, as Merricks puts it, 'multiple equally good candidates' for being the extension of a predicate or the referent of a term. Even here, however, it is not clear that the position requires one to posit many collocated entities to be the target extensions of the name 'David'. It seems quite clear that we can entertain the possibility that some selection of the sub-formations of simples within David could be 'determinately' David, and others could be neither determinately David nor determinately non-David. We do not, however, have to hold that each of these is itself an entity collocated with the others. We need only hold that it would *still be David* were the relevant atoms removed so that it was all that was left.

We should conclude then that the sorites is less important than might initially be thought for the question of whether or not there are everyday objects. To the extent that it is problematic it should be thought of as a paradox and not as an argument to the conclusion that there are no everyday objects. Sorites problems applied to everyday objects are of a kind with other problem cases that invoke vagueness and should be treated together with them. Even were the Organicist better able to cope with such a paradox than other positions, we should count this as only a limited theoretical benefit gained at the expense of their ontology. What is more we should note that sorites of everyday objects occur for Organicists as well, if only in application to organisms.

For what it is worth, we could note that the theory of objects presented in Chapter Two of this thesis lends itself to an 'unhappy' face solution to the sorites paradox as applied to everyday objects. An 'unhappy face' solution in Schiffer's terms is one which does not solve the paradox but is illuminating about why it is insoluble.

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[121] Fine notes an early presentation of the view in (Mehlberg 1958) (excerpted in (Keefe and Smith 1999)), and in (Lewis 1970).

The account of objects given in Chapters Two and Three suggested that objects are constituted by those collections of regularities in our environment that satisfy our object concepts. It was suggested that in the vast majority of cases there will be arrangement-formations that are causally responsible for these regularities. On such a view, something stops being, say, a table, when it fails to satisfy the concept 'table'. However, if one were to engage in a sorites-style deconstruction of a particular table an atom at a time, it would not be at all clear when one had reached a point where our table concept was no longer satisfied. The reasons for this are fairly obvious. As was noted in Chapter Two, any structure that gives rise to some arrangement-form will in fact encompass an indefinitely large number of efficacious substructures. We, operating at the macro level, are simply unable to determine at what point each of these becomes inefficacious as they degrade, or how that will effect the macroscopic properties of the object. It is clear that this degradation of those properties which enable an object-form to satisfy an object concept will happen gradually, and we will be unable to say at which point those concepts are no longer satisfied. This will be partly because we are not aware of the extent to which the efficacious structures within an object-formation have broken down and partly because our object concepts, while allowing that some things determinately are things of a certain sort, do not necessarily do very well at adjudicating borderline cases. Here then, we have a metaphysical account of the makeup of objects which allows in a moderately clear way for the failure of our object concepts in the face of a sorites-style deconstruction of everyday objects.

7.2   The Ship of Theseus

The Ship of Theseus is perhaps one of the more challenging philosophical puzzles about everyday objects. It is one that sortalists have struggled with[122]. It is also a puzzle which van Inwagen claims his theory of everyday objects gives the best account of. The Ship of Theseus problem differs from the sorites in

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[122] See, for instance, (Wiggins 2001), pp. 93-104 for a survey of the issues for sortalists in dealing with this sort of case, and of possible solutions.

being a particular problem for everyday objects rather then an instance of a more general problem. There are a number of points to be made about this problem and the Organicists' response to it.

The puzzle, it will be recalled, stems from a story such as the following:

1. A Ship, S1, is constructed at time t1 out of a finite number n of parts P1 to Pn.
2. As the ship sails around, over some reasonably extended period of time all the parts of S1, P1 to Pn are replaced, one by one, with newer parts, NP1 to NPn.
3. At time t2, once all the parts have been replaced a new ship, S2, is created from the original parts P1 to Pn.

The situation then is as follows: At the start of the story we have one ship, S1, composed of P1 to Pn. At the end of the story we have two ships, S2, which is also composed of P1 to Pn. And another, which in order to avoid begging any questions, we will call S3. S3 is the ship made of parts NP1 to NPn, and exhibits what van Inwagen ((van Inwagen 1990) p.132) terms a 'history of maintenance' that links it to S1. The question raised by the ship of Theseus puzzle is just this: Which of the ships at t2 is identical to S1? Is it S2, which has all the same parts, or S2 which has a history that can be traced back to S1?

There is a substantial literature on the ship of Theseus problem[123]. The aim of this section is not to solve the puzzle, but rather to examine the claim that the Organicist position offers more resources for the resolution of the puzzle then competing positions. Merricks does not discuss the Ship of Theseus in any

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[123] Wiggins takes the problem from Hobbes (ref) *De Corpore, II, H,* and cites Hobbes's source as Plutarch's *The Life of Theseus*. See also, (Carter 1983), (Rea 1995), (Barnett 2005), (Hughes 1997), (Simons 1997), (Johansson 2006).

depth[124], but van Inwagen clearly thinks that one of the advantages of his position is that it offers a solution to the Ship of Theseus, which he terms 'The greatest and most profound of the classical problems about the identity of artefacts' ((van Inwagen 1990) p. 128).

The Organicists' purported solution to the Ship of Theseus puzzle is as simple as their solution to the sorites paradox: Since there is no ship S1, and nor are there ships S2 or S3, none of them are identical to each other. So S1 is not the same ship as either S2 or S3. Or as van Inwagen succinctly puts it:

> '…if there are no artefacts, then there are no philosophical problems about artefacts' ((van Inwagen 1990) p. 128).

To be fair, van Inwagen has more to say on the matter than this (see *Material Beings* pp. 128–129). The Organicist can give an account of the arrangement of some objects into an arrangement that is shipwise, how over time these are rearranged into non-shipwise arrangements, and other simples are arranged in the same way as the original parts were originally arranged, and finally how the first lot of simples are then rearranged. The purported benefit of their position is that they have a principled reason for saying that this account of how 'parts' get moved around is the whole story; that there is no more to say than this. Somewhat similarly, Merricks argues that the best way to respond to the Ship of Theseus is to treat the matter as a purely pragmatic decision: since none of the ships exist, it is up to us which we decide to treat as the same as the other.

The first point to make is that, like the sorites, the problem recurs at the level of organisms. Perhaps the strongest thing that can be said in favour of the Organicist position is that it is easier to give an account of the persistence (or

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[124] He mentions it on page 184 of *Objects and Persons* (Merricks 2001), where he suggests that the non-existence of ships means that we can treat the best answer to the Ship of Theseus as a matter of pragmatics, and contrasts this to what would be the case for a life (see below).

not) of living things then it is to give such an account of inanimate objects. Aristotle takes organisms as paradigm cases of substances for a similar reason. Organisms are self-organising, and this makes it tempting to suppose that they are in some way special. None the less, organisms have parts that can be removed (or not), and if this is the case then, in theory at least, those parts could be reassembled in order to create a new organism.

Van Inwagen in fact offers a variety of interesting arguments about how to deal problems about how organisms persist. In dealing with problems of vagueness, for instance, he commits himself to 'metaphysical vagueness' and vagueness about identity (see chapters 18 and 19 of *Material Beings*) and develops a segment of a three valued logic (see chapter 17).

What is notable in both van Inwagen's and Merricks responses to the Ship of Theseus puzzle is that they do not suppose it to apply to organisms. Whatever is the case with the other puzzles, this is one where they take their position to be clearly superior to others. Thus Merricks:

> 'We ought to decide whether 'this ship belongs to Theseus' is 'true for practical purposes'. Moreover, I would add, our decision here—if it is both reasonable and we are apprised of all the other relevant facts—somehow constitutes what the 'truth for practical purposes' is. We cannot get it wrong.
>
> All this seems plausible with respect to ships and, indeed, artifacts generally. But the conventionality of 'truth for practical purposes' is not plausible when it comes to matters of personal identity. This asymmetry, I argued, evidenced an advantage, with respect to practice, of my ontology over that of the folk.' (Merricks 2001) p. 185

Merricks sees here two potential advantages to his view. One is that he can allow that all decisions about how far objects persist or not are in some sense a matter of convention, and that this in fact matches our intuitions about the Ship of Theseus case. The other is that he can simply dodge the question by resorting to what he takes to be the 'strict' truth which is that there are no ships.

This in fact exposes an oddity of Merricks position. Presented with S2 and S3, Merricks must say that the strict and literal truth of the matter is that there are in front of him two collections of simples, and both collections are arranged shipwise. Asked which is identical to S1, he should really say the following: S1 was not 'strictly speaking' a ship, it was some simples arranged ship-wise. Now S3 is, in fact, the very same collection of simples as were involved in S1, *standing in the very same relations*. Merricks cannot say that they are the same arrangement (as he does not admit to there being arrangements), but he must surely say that the simples arranged S3-wise stand in a peculiarly close relation to the simples arranged S1-wise. If one were not so committed as he to the non-existence of arrangements, however, one might go so far as to claim that S3 is the same arrangement of simples as S1. Seen in this way, his position begins to look less attractive: Strictly speaking, on Merricks' view there is reason to adjudicate one way rather than the other (because the simples in S1 have nothing in common with those in S3), yet he holds that what we should say should be determined on purely pragmatic grounds.

Like Merricks, van Inwagen sees the Ship of Theseus puzzle as unproblematic for organisms. He writes, for instance, in discussing the Ship of Theseus puzzle:

> 'Note that there is no tendency to identify a "reassembled" *organism* with the "original". If God were to "reassemble" the atoms that composed me ten years ago, the resulting organism would certainly not be *me*.' (van Inwagen 1990) p. 140.

Arguably, this confidence that Ship of Theseus problems would be unconvincing in the case of organisms is unfounded. It is clear that with the help of an omnipotent demon and/or a malicious scientist we can come up with an analogue for the Ship of Theseus case for persons or, if it is more plausible, for trees:

1. Jones (J1) is fully grown at time t1 and is composed of a finite number n of parts P1 to Pn.

2. Over the course of year a malicious demon causes the parts of J1, P1 to Pn, to be replaced, one by one, with newer parts, NP1 to NPn. The old parts are kept somewhere by an evil scientist.

3. At time t2, once all the parts have been replaced, a new version of Jones, J2, is created from the original parts P1 to Pn put back together (and quickened with a convenient lightening bolt).

The situation then is this: at time t2 we have two versions of Jones. J2, which is made of all the original parts of Jones (P1 to Pn) arranged precisely as they were at t1[125]. We also have J3, J3 is linked to J1 by a history of maintenance but is made of NP1 to NPn and has no parts that J1 has. Which version of Jones, J2 or J3, is identical to J1? Let's call this the Body of Jones problem.

If Merricks and van Inwagen are correct in saying that an analogous problem to the Ship of Theseus does not arise for organisms then there must be one or several relevant asymmetries between the Ship of Theseus puzzle and Body of Jones problem. What are they supposed to be?

One clue can be found in the quote from van Inwagen just above. Clearly, J3 will have no doubt who 'me' is. This seems like a less conclusive argument then van Inwagen supposes, however. In the first place if we suppose that 'Jones' to be the name of a tree rather than a person, then such considerations are irrelevant. More interestingly, supposing that J2 was put together as J1 was (to the very atom) at t1, we may suppose that he has all the same mental states as J1. Phenomenologically, it will seem to him that he has just jumped a year into

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[125] In fact, since we can assume Jones went through a variety of physical changes between t1 and t2, that might not be possible; we might have some simples arranged in some average of the states between S1 and S2. It is not clear that we should put much weight on this though—the parts of the Ship of Theseus undergo some wear as well.

the future. Neither J2 nor J3 will have any doubt that the other is not 'me'. Both, in fact, will have a claim to being psychologically continuous with J1.

Another clue might be found in what has to go on in order for there to be a history of maintenance in the two cases. Van Inwagen introduces the notion of a 'history of maintenance' not in relation to the Ship of Theseus problem, but in relation to a problem that we will broach shortly, the problem of how Organicists are going to manage diachronic reference to the same object.

In order for a ship to be maintained some things other than the ship need to undertake activities; the ships' ongoing maintenance depends upon what things other than the ship do. The activities that maintain Jones, by contrast, are self directed. This seems to van Inwagen a fundamental difference. On this basis he explicitly rejects the notion that his answer to the Special Composition Question should be modified to allow artefacts that are the subject of a 'history of maintenance' to be counted as composite as well. He says for instance:

> 'This answer goes against all my deepest instincts. The question whether certain things constitute a life is a question about the relations they bear to one another and about nothing else. The question whether certain things are current objects of a history of maintenance, however, is a question about those things and other things as well.'

And later on the same page:

> 'My deepest instincts tell me that composition is an internal relation and that, therefore, a proper answer to the Special Composition Question must take the form of a statement that asserts a necessary extensional equivalence between the relation expressed by 'the xs compose something' and some internal multigrade relation'. (van Inwagen 1990) p. 138.

We can respect van Inwagen's metaphysical instincts, but they are unlikely to impress those who do not share them. Sortalists, for instance, are committed to

there being kinds that any identity statement must be understood in terms of. But some sortalists will also accept that what determines which kind of thing they are dealing with may be affected by factors that are external to the thing in question. That the Mona Lisa is a work of art, for instance, is down not just to her physical make up but also her current social context and the context in which she was created. Sortalists of this stripe may accept that composition is an 'internal' relation, but they should pause before accepting that whether there is an object before them must depend entirely upon relations between the simples before them (which is another reason for them to reject the notion that composition is what matters in ontology).

It is worth noting that in Section 15 of *Material Beings* (van Inwagen 1990) van Inwagen defends an account of personal continuity in terms of brain continuity, and in fact in Section 16 he discusses a case of splitting. It is difficult, however, to see how these discussions offer additional resources for solving the Body of Jones problem. We could think of the Body of Jones problem as a case of duplication; duplication cases give rise to well known problems of personal identity[126]. But even if we allow this, it is difficult to see why the Organicists' distinctive ontology would allow them to do better in dealing with duplication problems than anyone else. The fact that van Inwagen gives an account of personal continuity in terms of brain continuity does not seem to help either; the Body of Jones problem is also the Brain of Jones problem.

The splitting case that van Inwagen discusses (the case is introduced in (van Inwagen 1990) pp. 202-203) is an idealisation involving a being named 'neo-cerberus' who has two brains. Van Inwagen imagines an interlocutor arguing that on splitting the being in half there would be two new conscious beings; the challenge for van Inwagen is that since the two brains existed (and were conscious) before the split, two, rather than one, entity inhabited the body of neo-Cerberus, and so neither of them could have been identical with the

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[126] For a classic exposition of such problems see Part Three of (Parfit 1984).

organism that was neo-Cerberus. Van Inwagen's reply is that (see, e.g. pp. 205-206) there is no continues consciousness throughout the split (as in order for there to have been continued consciousness an organism would have had to have survived the split). This though offers no help with the question of the Body of Jones. It seems implausible to suppose that at some point between t1 and t2 Jones was suddenly destroyed, given the incremental nature of the replacement of his parts. Even if we accepted such a conclusion, it hardly constitutes an advance in dealing with the puzzle.

There is then, no obvious non-question begging reason to distinguish the Ship of Theseus problem from the Body of Jones problem. If the Organicists have a positive answer to give to the Body of Jones problem it will have to come from the details of their positive ontological claim. It will have to come from their account of what a life is. Even once they have allayed our worries about composition, they will still need to show that the resources offered them by restricting existence to living things and simples are actually helpful in this respect.

Again, the point here is not to suggest that there is no way for Organicists to broach the problems of everyday objects. The point is simply that they do have to bear the burden of doing so, and it is not at all obvious why we should suppose that their ontology puts them in a better position to do so than anyone else.

Finally, we might note that the Ship of Theseus itself highlights a further semantic issue for Organicists to deal with. Quine (Quine 1951b) noted that there is often a need to pay for ontological economy with increases in 'ideology', and it seems that here we have an analogous issue. It is not just that Organicists need a greater stock of predicates and names in order to make their position reasonable, but as was argued in Chapter Five, that they need an alternative account of the appropriate application conditions of object terms.

The problem of the Ship of Theseus is, for most, a problem about the identity of everyday objects. The question to be answered is 'Which ship is the Ship of Theseus?'. As Organicists deny the existence of everyday objects the problem resolves itself into an issue about when to treat diachronic applications of the term 'Ship of Theseus' as true (for van Inwagen) or nearly-as-good-as-true (for Merricks).

The Ship of Theseus is a particularly complex case, but in fact this is something that Organicists need to be able to give a general account of. As was noted in Chapter Two (following Thomasson see (Thomasson 2007) p. 40) our object concepts and terms need both 'application conditions' and what Thomasson terms 'co-application conditions'. The co-application conditions for an object term are the conditions that determine when it applies to the same object on different occasions.

If we think about an object picked out by a description such as 'the chair that the queen was crowned on' or a named object such as 'the Golden Hind', it is clear that we can ask and give an answer to questions such as: is the object in front of me the *same* chair that the queen was crowned on, and is the ship in front of me the *same* one in which Drake circumnavigated the globe?

We saw in Chapter Five how Organicists attempt to account for our everyday object language in ways that do not commit them to the existence of everyday objects. Van Inwagen, it will be recalled, paraphrases sentences about objects in terms of supposedly equivalent sentences about simples arranged object-wise. As we saw, Merricks treats our everyday speech about objects as strictly speaking false, but 'nearly as good as true' where there are simples arranged object-wise about which the same claims could be made.

The importance for the Organicist of the theory of plural reference has perhaps not been highlighted here as much as it could have been. The point of plural reference is that it allows for the predication of non-distributive properties over

collections of individuals. This is what the claim that simples are arranged in the manner of some object amounts to: the attribution of the non-distributive property of being arranged object-wise to some simples. (We have been allowing Organicists the assumption that we are in fact able to make reference to microscopic simples in this way).

Here we will simply point out that simples arranged object-wise are not susceptible to re-identification. To attribute the property of being arranged in a certain way to some simples is not, according to Organicists, to identify an arrangement. Thus one cannot say that 'this' is the same arrangement as 'that'. In this thesis I have suggested that the very property of being object-wise arranged is something that can be tracked and that grounds our object concepts. Organicists cannot say this.

One could, presumably, try and make the claim 'these are the same simples that Drake sailed around the world in, and they are arranged in the same way now as they were then'. Of course, that would be very unlikely to be true. Even if one could track arrangements of simples one could not do so for very long. Arrangements of atoms are extremely fragile; knock a couple of atoms off and you no longer have the very same simples arranged boat-wise. Everyday objects, if they exist, are a good deal more robust than arrangements. If we are to make sense of the co-application conditions of our object concepts in terms of atoms arranged object-wise then we will need more to go on.

This is where van Inwagen's notion of a history of maintenance comes in. For instance, he thinks we can paraphrase 'the very same house that stands here now has stood here for three hundred years' like this:

> 'There are bricks (or, more generally, objects) arranged housewise here now, and these bricks are the current objects of a history of maintenance that began three hundred years ago: and at no time in the period were the then-current objects of that history arranged

housewise anywhere but here.' (van Inwagen 1990) p. 133

He acknowledges that there are problems with such a paraphrase but thinks it is 'on the right track' (p. 134).

One issue that stands out is that this notion of a 'history of maintenance' only applies to artefacts. If one were to go and climb Mount Everest today, one would be climbing the same mountain that Hillary first climbed. How is van Inwagen to make sense of a sentence saying as much? And mountains are not the only non-artificial objects we might want to so keep track of. The sun might be another, as might our planet, or the Atlantic Ocean. He gives a clue about how he might respond in the following:

> 'Statements that are apparently about the persistence of artifacts make covert reference to the dispositions of intelligent beings to maintain certain arrangements of matter. We might compare statements of this sort with statements apparently about the persistence of constellations ("the heavens change slowly; the constellations of today are the constellations the Greeks named"), which make covert reference to the perspectives of actual or possible observers of the heavens'. (van Inwagen 1990) p. 134.

Now then, we have built into everyday persistence or identity claims about almost anything some sort of tacit reference to whomever else did or could have conceptualised that object. Implausible as this is as a general account of object terms, it clearly is not sufficient as an account of how we now refer to non-artefacts that others encountered earlier. Hillary did not climb the same mountain-wise arrangement of simples that is in Nepal now and is called Everest. Bits will have fallen off Everest since then, and other bits may have been added. So what is it that van Inwagen requires to have been maintained? We can make reference to the perspective of Hillary, but his perspective was a relation to a different collection of simples to that which we would see if we went to Everest.

We can paraphrase that quote that we gave above :

> There are simples arranged mountainwise here now, and these simples
> are the current objects of a history of maintenance that began when
> people first reached this place: and at no time in the period were the
> then-current objects of that history arranged mountainwise anywhere but
> here.

It is just not clear how to make sense of this.

Merricks offers a more promising alternative. He suggests that we can solve the
issue of when one object-wise arrangement is the same as another by
introducing the idea of simples being arranged 'same-object wise'. The idea here
then, is that it would be 'nearly as good as true' that this is the same mountain as
the one that Hillary is famous for climbing if and only if, the simples in front of
us are arranged 'same mountainwise' as the arrangement of simples that he
climbed. He gives a condition for some simples being arranged 'same statue-
wise' as follows (as before this is supposed to generalise):

> 'Atoms at t are arranged same-statuewise as atoms at t* if and
> only if (i) the atoms at t are arranged statuewise; (ii) the atoms
> at t* are arranged statuewise; and (iii) if there were persisting
> statues, then the atoms arranged statuewise at t would
> compose the same statue as the atoms arranged statuewise at
> t*.' (Merricks 2001) pp. 176-177

Here then we see Merricks using the same rhetorical strategy as he used when
introducing object-wise arrangements, an appeal to what we in fact do believe
about everyday objects. This is ingenious, and Merricks argues that it is in fact a
better account of our everyday object speech then the account that takes it to be
about objects. The basis of this claim to utility is that the account purportedly

allows for those cases where we want to allow that whether some artefact persists over time is to some degree a matter of stipulation. As was mentioned above, the Ship of Theseus is one of these. Merricks suggests that we could imagine a court case about whether some statue I own is the same one as was owned in the past by the royal family and that we would accept this sort of legislation. His suggestion is that by removing artefacts from our ontology we can replace talk of them with some sort of conventionalism about object identity.

We have already noted that Merricks' feeling that problems such as the Ship of Theseus do not arise for organisms is overly optimistic. We might here express scepticism about whether Merricks' account can allow for this sort of legislation and whether it is a benefit for his account if it does.

The reason we might doubt that the notion of same-objectwise arrangement allows for a conventionalism about when some object is the same as another is its reliance on (what Merricks takes to be) the contra-possible identity of one object with another. We have already noted (see Section 4.1 above) that Merricks' appeal to contra-possibles is at best slightly odd. But if he is truly to appeal to them he cannot suppose that we legislate how they are any more than someone who thinks that there really are statues can.

Someone like Dorr, who argues that the correct assertability conditions of our object talk come away from the truth conditions, might hold something like this, but such a position cannot then rely upon the contra-possible behaviour of objects to establish what the assertability conditions of our object speech are. To rely on such objects is not conventionalism in the sense that Merricks thinks would be helpful.

We can all agree that in the court case example the answer arrived at is driven by pragmatics. However, one cannot just 'decide' that a statue in your possession has survived from the 17th century or what not. It is just not clear that the

Eliminativist gives a better account of this than someone who believes in objects. Consider, for example, someone who created an atom for atom replica of Michael Angelo's David. Would this replica *be* Michael Angelo's David? Certainly not. It would not be even if some court were to legislate that it was the original Michael Angelo's David.

The account of objects sketched in Chapter Two of this thesis allows that at times the application and co-application conditions for our object concepts may be unclear, and it is consistent with there being a need to occasionally adjust concepts in the light of new discoveries. What it relies on, however, is that they track what is actually going on in our environment. Merricks' account is wrong because i) it is not clear that it does allow for the sort of conventionalism he thinks would be useful, and ii) even if it did, object identity is not a matter of convention, so making 'same-objectwise-arrangement' a matter of convention would mean it is not able to adequately account for our actual practice.

What Merricks is suggesting could be termed a piggy-back semantics: it borrows the semantic discipline of our actual everyday object talk while rejecting its ontological commitments. Merricks is piggybacking an alternative semantics onto the semantics of our actual everyday object talk in a somewhat *ad hoc* manner in order to provide a semantics consistent with his metaphysics that would allow us to function in the world. The conclusion we should draw, is not that the Organicist position copes especially well with the problem of the Ship of Theseus, but rather that it has the same problems with all objects that other positions only have with problem cases.

It has been argued in this chapter that the Organicist position incurs two sets of argumentative burdens in relation to the puzzles about everyday objects. One set of burdens arises from the application of those puzzles to the everyday objects which they do think exist: living objects. The challenge of these puzzles is one that they bear along with anyone else who believes that there are some composite objects.

The other set of argumentative burdens is incurred by their claim that they do better with the puzzles as applied to non-living everyday objects than other positions do. They need to show that the costs that their position gives rise to by virtue of eliminating objects are compensated in terms of utility in dealing with the puzzles. In the last part of this section we have examined some of the costs incurred in terms of the complexity of the semantics given to our everyday talk of persisting objects.

We should draw the following conclusion from the two puzzles discussed in this chapter: the Organicist position, like any other philosophical position has strengths and weaknesses. This chapter suggests that any benefits Organicism might offer in dealing with the puzzles are either not as significant as might initially have been thought (as in the case of the sorites) or correspond to challenges for the position elsewhere (as in the case of the Ship of Theseus).

The purpose of this thesis has been to argue that Organicists' emphasis on the notion of composition is misguided. If one thought that the Organicist position did a good enough job in relation to the puzzles, however, one might be tempted to attempt to rehabilitate it even in the face of this critique of compositional ontology. In order to warrant this, however, Organicism would have to do very well with the puzzles. It would have to be clearly better than the alternatives. What has been suggested in this chapter is just that Organicism is not a 'quick fix' for the puzzles about everyday objects. It may be that Organicism has some advantages over other positions in relation to the puzzles that stem from its positive ontological claim; but if so these advantages are not self-evident and have yet to be shown to be sufficient to outweigh the costs of the position.

Conclusion

This thesis has presented a number of challenges to the Organicist position. Organicism is founded upon two key ideas. One founding idea is that we can establish what things there are by determining when composition occurs. When, that is, mereological simples compose other things. The other founding idea is the O-arranging manoeuvre; the idea that we do not need objects in our ontology because anything that objects can do, simples arranged object-wise can do just as well.

The idea that composition is what matters in ontology was challenged on two scores. It was noted that the concept of 'composition' that Organicists appeal to is not one that they can offer any real analysis of; the best they can manage is a very contentious claim about the extension of the concept. Firstly, it was argued that this means that there is a difficulty in making sense of the notion of a mereological simple. Secondly and more importantly, it was argued that this means there is no principled reason to reject the notion that everyday objects are functional simples. Even if we were to accept the Organicists' claim that the only composite objects are organisims, the claim that the only objects are organisms would not follow because we have been given no principled reason to reject the idea that (in the slightly mysterious sense of composition that is at issue in this debate) everyday objects are non-composites or simples.

In the last part of this thesis some consequences of the O-arranging manoeuvre have been drawn out. It was noted that one purpose of the O-arranging manoeuvre was to allow the 'no-difference' claim; the claim, that is, that things would appear just as they actually do even if there were no objects. We noted that one consequence of this is that while denying that there are everyday objects, the Organicist accepts that the world is in other ways very similar to the way we normally take it to be. Most importantly, they must allow that those macroscopic sparse properties that we take to be distributed through the world

are distributed in more or less the way we suppose them to be. In Chapter Five, we saw the key role that the O-arranging manoeuvre must play for Organicists in making sense of speech and thoughts about objects.

This then fits nicely with the theory of objects presented in Chapter Two. The theory presented there takes objects to be those regularities in our environment which satisfy our object concepts. In Chapter Three, we saw that this need not be taken as a new or radical theory, but rather as an extension of one of the original lines of thought of British empiricism.

It was then argued that by utilising the O-arranging manoeuvre the Organicists have committed themselves both to the existence of the sorts of regularities that the theory of properties in Chapter Two requires for there to be objects, and to there being object concepts which these regularities satisfy. The second challenge that this thesis presents to Organicists then, is to say why we should not accept on this basis that there are everyday objects. The reasons they have presented to date have focused upon composition, but if they are to rely on this, they must give us a better account of what composition is.

The conclusion I have drawn then, is that the Organicists' negative ontological claim is false. We have seen that we have reasons to reject their reasons for holding it, and further, that we have reasons to suppose that there are everyday objects.

At the beginning of Chapter One, an approach to questions about the existence of everyday objects was outlined that I termed 'compositional ontology'. The basis of this approach is that one can establish what there is by establishing what mereological simples there are, and then establishing under what conditions they will compose further things. By establishing, that is, rules of composition. It was noted that there are three available options that one can take concerning composition, and that these give rise to cognate positions with respect to ontology. Nihilism, for instance, is the thesis that there are no everyday objects,

and it is supposed to follow from the thesis that there is no composition. Universalism is the view that for any two objects there is a third object that they compose and is supposed to follow fairly immediately from the thesis of Unrestricted Composition. The thesis that is, that any two entities always compose a third. Organicism is supposed to follow from a particular version of restricted composition: the thesis that sometimes simples compose an object, and sometimes they do not. The particular version of restricted composition that the Organicist appeals to says that objects compose another when they (jointly) constitute a life.

This thesis has offered arguments against Organicism. In doing so, it has also raised a challenge for the compositional approach to ontology in general. If, as is argued in Chapter One, it would be better to conclude that everyday objects are simple then to conclude that there are no such objects, then we need no longer treat 'what there is' as hostage to composition. Given this, we can argue that if we are interested in composition the order of discovery should be reversed. Rather than finding out what things are composite, and using this to work out what exists, we should first find out what there is and then work out what things are composite.

It has been shown here how this sort of consideration is telling against Organicists. Nihilist share with Organicists the negative ontological claim (lacking only the positive ontological claim that there are living things). To the extent that they support their claim in similar ways, parallel arguments will apply. We saw in Chapter Six, for instance, that Dorr's argument from over-determination faces similar challenges to Merricks' argument from over-determination. At least one prominent Nihilist, Peter Unger, does not make use of the O-arranging manoeuvre to support his position. Without the O-arranging manoeuvre though, nihilists face a greater challenge, for they must assuage the implausibility of denying the existence of everyday objects in some other way. We can tentatively, then, suggest that a similar case may be made against nihilism as has here been made against Organicism. It will be noted, however,

that the Nihilist is in a stronger position than Organicists are with respect to the account they can give of composition. They can say that there is none. The point remains, however, that there is no immediate inference from this to there being no everyday objects.

In the First Chapter we saw that compositional ontology has its roots in mereological approaches to composition. Little has been said here that will challenge someone who adopts a Universalist ontology on the basis of endorsing unrestricted composition. We have shown that we do not *need* to endorse such an ontology in order to maintain the existence of everyday objects, but there are other reasons for holding such an ontology. Sider, for instance argues that there are theoretical benefits in dealing with issues about persistence through time (Sider 2001). This thesis has given reasons to think that the best approach to ontology is not, in general, a compositional one. If, however, one is still inclined to adopt a compositional ontology, Universalism is the version least affected by this thesis and it is the version one should chose.

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