From Objects to Individuals:

An Essay in Analytic Ontology

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis,

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Abstract

The brief introductory chapter attempts to motivate the project by pointing to (a) the intuitive appeal and importance of the notion of an object (that is, a "paradigmatic" individual), and (b) the need – for the sake of progress in at least two important debates in ontology – to replace this notion with a series of related notions of individuals of different sorts.

Section One of Chapter Two aims to accomplish two primary tasks. The first is to clarify the intensions of three often employed but ambiguous categorical terms: 'individual', 'particular' and 'object', with emphasis on the third, which is often taken to be of particular philosophical significance. I carry out this clarificatory task by weighing various positions in the literature and arguing for explications of each notion that are maximally economical and neutral, that is, explications which (a) overlap as little as possible with other important ontological notions and (b) do not require us to take a stand on any apparently intractable (but not directly relevant) debates (e.g. on the problem of realism vs. nominalism about universals). The second task of 2.1 is to delineate the various ontological distinctions that will be turned, in Chapter Four, into the "dimensions" of which the ontological framework I will be advocating there is composed. The delineation of these distinctions takes place naturally in the course of attempting to characterize the notion of an object (an intrinsically unified, independent concrete particular) and to distinguish it from the notions of an individual and a particular, in spite of the fact that objects are both individuals and particulars.

In the second section of Chapter Two I illustrate the centrality of the notion of an object in Ontology by showing how that notion figures in the debate over the existence of artifacts. I argue that progress in this debate has been hindered by the way it has been framed, and that seeing the issue as concerning not whether artifacts *exist* but whether artifacts *are objects* (in the sense outlined in 2.1) enables us to better appreciate and accommodate the different perspectives of the debate's participants. At the same time, this way of dissolving the dispute makes clear that existence is not limited to entities that fall under the relevant concept of an object, foreshadowing the pluralistic ontological framework to be developed in Chapter Four.

Chapter Three pronounces on a second debate in ontology, in which three positions concerning the correct ontological assay of the class of intrinsically unified independent concrete particulars (objects) are in competition with each other. My conclusion is that none of the three positions succeeds, since each faces fairly serious difficulties. I suggest that the (or at least one major) root of our inability to locate the correct ontological assay is the inclination to treat all ontologically significant entities as objects in the indicated sense, and the corresponding inclination to attempt to give an ontological assay that covers all objects, neglecting important differences between distinct types of individuals.

Chapter Four begins by displaying in greater detail the considerations (canvassed very briefly in the introductory chapter) that make the notion of an object appear to be indispensible. However, the results of the second section of Chapter Two and of the entirety of Chapter Three

have already shown two areas in which the notion of an object tends to lead to confusion. So a tension emerges between the *prima facie* necessity of the notion and the reasons we have found for thinking that this notion either is itself problematic or at least tends to cause problems for other issues in Ontology. The remainder of Chapter Four consists in explaining my strategy for moving forward. Briefly, this strategy involves replacing the notion of an object with a series of concepts applicable to individuals of various types. Each of the components belonging to a given "individual-concept" is drawn from one or another side of one of the ontological distinctions that together form an overall ontological framework, and which components are involved is a matter to be determined by examining the conceptual demands imposed by the various practices (explanatory or otherwise) which we engage in, that require us to appeal to individuals of the type in question. The resulting "pluralistic" ontological framework provides a way of situating and relating types of individuals that both avoids the confusions that the single general concept of an object leads to, and is capable of indicating the varying degrees of "ontological robustness" or "object-like-ness" of any given type of individual. I conclude by suggesting how the framework I am advocating can be elaborated on and put to use in further research.

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Chapter 1

Introduction

It seems undeniable that we encounter individuals in our everyday experience of the world around us. The world, as it comes to us in experience, is a world of individuals. Children, from a very early age, seem completely adept at singling out individuals and giving them names. The notion of an individual seems indispensable and fundamental to any attempt to understand or characterize our experience of the world or to explain how it is that we organize our experience into the overall view we have of what the world is like.

  The notion of an individual also plays a central role in a variety of philosophical disputes. To mention only a few, debates in ontology about "what there is" or about ontological commitment can be construed as asking "What (kinds of) individuals exist?" and "To the existence of which (kinds of) individuals are we committed by our adherence to a particular theory?"[1] Debates concerning the nature of (synchronic or diachronic) identity necessarily employ the notion. Interesting questions in the Philosophy of Science concern the applicability of our ordinary notion of an individual to entities on the sub-atomic level. And the age-old question of the nature of substances – the contemporary discussion of which will be the subject of part two of this essay – can be seen as a question about individuals of a certain sort (the "paradigmatic" sort).

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[1] If we take a naturalistic perspective and hold that what exists are the entities quantified over in our best scientific theories, then these entities – the values of the relevant bound variables – will be the individuals we are justified in believing to be the constituents of our world.

But in spite of the central importance of the notion of an individual from both everyday and philosophical perspectives, the notion is far from clear and unambiguous. We ourselves, along with the things we care about most - such as other people, our pets, our livestock, garden plants, houses, cars, TVs, computers, tables and chairs, etc. – indeed, medium-sized dry goods in general – are commonly taken to be the paradigmatic individuals. Yet upon reflection, it seems to be correct to think of a number of other kinds of thing as individuals as well. For instance, events, properties (at least when taken as tropes[2]), relations, classes, and perhaps the universe as a whole all seem to be properly referred to as individuals, in some sense. Such individuals, however, seem to be categorically distinct from the kind that includes paradigmatic individuals like those referred to above. Given that there seem to be individuals of fundamentally different kinds, the question arises how best to delimit the conceptual boundaries between these kinds; what feature(s) do they share in common, as individuals, and in what respects do they differ, as individuals of distinct kinds?

One way to understand the present work is as a reconsideration of the traditional view that the category or class of what I have been referring to as the paradigmatic individuals – the category of objects or, more traditionally, of individual substances – should be seen, for both commonsense and philosophical reasons, as somehow ontologically privileged. In what follows, I will be giving the following technical sense to the concept denoting this category: the categorical concept "Object" is the concept of an *intrinsically unified, independent concrete particular* (an IICP for short). It will not, however, be my aim to defend the view that IICPs are ontologically privileged. Indeed, a conclusion I will eventually be drawing is that the univocal

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[2] That is, particularized properties such as the particular redness of the tomato on my desk.

general notion of an object deserves to be replaced by a series of related concepts applying to individuals of various types. Nevertheless, I will be taking the view seriously, since it continues to play an integral role in some major ongoing projects in Ontology. The first project, which I discuss in the second half of Chapter Two, attempts to determine whether certain kinds of objects *exist* or *are real*. The second project, which is the focus of the entirety of Chapter Three, attempts to give an ontological assay, an account from an ontological perspective (rather than a logical one) of what, generally speaking, objects consist of or amount to.

Various considerations support the view that the category of objects is of special philosophical significance. I will briefly canvass some of these considerations here, noting that a more complete treatment of them is found in the first half of Chapter Four. For one thing, objects are very frequently appealed to when providing the *explanans* for phenomena we want to explain. The phenomena explicable by appeal to the presence and/or activity of objects belong to a very broad range, from explanations that appeal to physical bodies in classical mechanics to evolutionary and functional accounts in biology to accounts of rational deliberation and personal responsibility in decision-theory and ethics, to name only a few.

Objects are the unified loci of capacities and dispositions which seem to be needed – at least in a large portion of cases – to serve as the referents of the nouns and noun-phrases which serve in turn as the logical and grammatical subjects of predication.[3] Accounts of accidental change (change in properties) seem to be inexplicable without reference to some enduring object which

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[3] This point is regarded by some as a fairly controversial one. See Strawson's (1959) *Individuals*, p. 136 ff for discussion.

bears the properties. Moreover, our practice of singling out items in our experience and tracking them through time would apparently be unable even to get off the ground without some notion of a persisting substance or continuant. These are only some of the reasons that could be adduced in making the *prima facie* very plausible case that the category of objects is indispensible from practical, as well as scientific and ontological perspectives.

I called the case for the indispensability of objects plausible only *prima facie*, because, as I will be attempting to show, the general term "object" turns out not to be as unequivocal as it may have been thought to be. The discussion of Chapter Three, together with the results of sections 2, 3 and 4 of Chapter Four, provide the argument for this claim. Chapter Three shows that none of the three main competing attempts to provide a general ontological assay of objects is ultimately successful. Chapter Four diagnoses the result of Chapter Three as being (in part) a symptom of the misguided tendencies to treat the concept of an object as a univocal one, and to seek an ontological assay that applies to everything that falls under it. This mistaken assumption has led to a stalemate in the debate over the correct ontological assay for objects. Something similar seems to be taking place, as I argue in the second section of Chapter Two, in the debate over whether certain types of individuals (e.g. artifacts) exist. I suggest, in Chapter Four, that progress can be made in both of these debates – the benefits of the competing views on the ontological status of artifacts and the competing styles of ontological assay can be appreciated and better put to use – if what seemed to be a unitary notion of objecthood is broken down into a family of resembling concepts under which the various types of ontologically significant individuals fall, each such "individual-concept" drawing its conceptual components from a pool of various ontological distinctions. Each of these distinctions determines what can be seen as a

series of ontological "dimensions" in the context of which various distinct concepts, each applicable to a different sort of individual, can be situated.

In brief, I will be contending that the dissolution of the notion of an object, necessary for progress in some important arenas of debate in Ontology, should not lead us to despair. To the contrary, the pluralistic approach suggested by the family-resemblance account of individual-concepts being offered opens up fruitful avenues for progress in both of the specific ontological projects mentioned above, and perhaps elsewhere.

Chapter 2

The Concept of an Intrinsically Unified Independent Concrete Particular

This chapter will consist of two main sections. The first can be conceived of as a kind of ontological 'map-making' in which three technical concepts are distinguished – the most general concept of an *individual* – that is, a singular entity; the concept of a *particular*; and the concept of an *object*. The task of laying out the intension of each of these ontologically significant classificatory terms is an important one since, in the literature that employs these concepts, authors are not always as careful as they ought to be at indicating what is involved in each case. By sorting through a variety of disputes and issues I hope to be providing a small book-keeping service to Ontology by indicating what seem to be the optimal conceptual boundaries to draw around each of these notions. Optimality in this context involves, roughly, three constraints: (a) respect of common usage of terms, together with (b) an attempt to minimize overlap in the intensions of various terms, however related they may be, and (c) the attempt to maintain as neutral a perspective as possible on various seemingly intractable ontological issues.

 Although I disagree with some of the authors whose views I discuss in the first section, what will be of greater interest here are the two things I accomplish, in the course of carrying out the task of conceptual clarification, that will be particularly important for the rest of my project. First, a careful examination of each intension (of 'individual', 'particular', and 'object') leads to the explication of several ontological distinctions which will be instrumental in generating the ontological framework in which Chapter Four's attempt to situate the various individual-concepts will be able to operate. Secondly, observing some of the major fault-lines that result from the dialectical stresses and strains evident in the literature makes possible the isolation of

the ontologically central, general notion of an object that seems to be (often implicitly) lurking in the background of various important debates in contemporary ontology, two of which will be discussed in this thesis.

The second section of the present chapter will examine the first of the two debates within contemporary Ontology to be discussed, a debate which focuses on the question of whether certain kinds of individuals (artifacts, ordinary physical objects, and mereological compounds), strictly speaking and in general, *exist* or *are real*. My primary goal will not be to adjudicate between the conflicting positions, though I will indicate in a preliminary way what I take to be problematic about each of them. The main conclusion of this section will, instead, concern the overall structure of the dispute. What is really at issue, I will be arguing, is not whether certain kinds of familiar entities do or do not *exist*, but whether the entities in question are in fact *objects*, in the ontologically central sense I will have distinguished in the first section of the present chapter. Showing how the debate can be recast in this way will illustrate the centrality, for Ontology, of the concept of an IICP, while at the same time suggesting a lesson about how progress might be made in this sort of debate that will be more fully developed at the end of Chapter Four.

I treat the second debate, in Chapter Three, in much greater depth, as the conclusion I draw from it seems to be more directly in conflict with the *prima facie* claim that objects are indispensible for Ontology. This conflict will provide the primary impetus for the development of the family-resemblance account of individuals in Chapter Four.

2.1 Conceptual Cartography

As noted in the Introduction, intrinsically unified independent concrete particulars (IICPs) – which can (in a very rough and ready way which I will qualify later on) be identified with ordinary objects such as human beings and pine trees, and perhaps chairs, statues, lakes and mountains – are the paradigmatic *individuals* we find in our everyday experience. Indeed the terms 'individual' and 'object' are often used interchangeably in ordinary English, at least in certain uses of those terms. For this reason, I approach the question of what it is to be an IICP via a consideration of the nature of individuals and of individuality. The term 'individual' is a fairly ambiguous one, and has radically differing uses in English. One thesis of this section will be that there is an extremely thin sense of 'individual' and there are at least a few thicker senses of the term, the thickest of which will be the sense captured by the phrase "intrinsically unified independent concrete particular object". My approach to clarifying the relevant notion will take us through a consideration of several ontological distinctions that will also prove important for what happens in later chapters, most notably in Chapter Four, where the distinctions are woven together into a framework useful for situating various types of individuals.

What is it, in general, to be an individual? The *thinnest* of the senses of 'individual' can be grasped by considering it as the most general count noun. In this sense, the word is capable of denoting absolutely anything at all, where 'anything' might be paraphrased as whatever we can think and/or talk about.[4] Bertrand Russell attempts to make this sense intelligible as follows:

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[4] Whether we can legitimately talk about things about which we cannot think might be a further important question. If to talk about x only requires the use of a name of x in a sentence there would seem to be no special problem, but if to *genuinely* talk about x requires making reference to x certain difficulties can arise. For instance, can we make reference to fictional entities? What about incoherent or impossible entities? Note that neither the extension of Russell's 'term' nor that of Lowe's 'entity' (see discussion to follow) necessarily includes impossible entities; Russell seems implicitly to allow it ("anything else that can be mentioned") while Lowe seems positively to exclude it

> Whatever may be an object of thought, or may occur in any true or false proposition, or can be counted as *one*, I call a *term*. This, then, is the widest word in the philosophical vocabulary. I shall use as synonymous with it the words unit, individual and entity. The first two emphasize the fact that every term is *one*, while the third is derived from the fact that every term has being, i.e. *is* in some sense. A man, a moment, a number, a class, a relation, a chimera, or anything else that can be mentioned, is sure to be a term…[5]

To know of something that it is an individual in the sense of being a Russellian term does not tell us much about what we are dealing with. For example, it does not tell us whether the something in question is actual or merely possible. In fact, even the round square – something which is not even logically possible – would count as an individual in this emaciated sense, since it can occur in such true statements as "The round square is not a fish." Similarly, the collection of the Andromeda galaxy, my left sneaker and the round square would presumably meet the criterion as well. We might give this collection the name 'Stanley' and refer to it as one among (infinitely) many collections and make various comparative statements about it and the other collections.[6]

Hopefully the description of the round square and Stanley as individuals raises some red intuition-flags. For one thing, we tend to think that if something is to count as an individual, it

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("anything whatever that does or could *exist*"). For a discussion of Meinong's views on non-existent objects see van Inwagen (2003) "Existence, Ontological Commitment, and Fictional Entities" in *The Oxford Handbook of Metaphysics*, Loux & Zimmerman, eds. Oxford.

    Relatedly, it might be useful to distinguish three main types of entity: linguistic or grammatical, mental or conceptual, and real or ontological (on a physicalist ontology we might substitute "physical" for the heading of the third class). I have not seriously worked out the details of this suggestion, but for related discussions see various works by Zalta, including *Abstract Objects: An Introduction to Axiomatic Metaphysics*, (Dordrecht: D. Reidel, 1983) and his (2003) "Referring to Fictional Characters", *Dialectica*, 57:2, pp. 243-254.

[5] Russell, B. (1964, p. 43). Citation taken from Henry Laycock's (2002) *Stanford Encyclopedia* entry "Object." Strawson expresses a similar notion in *Individuals*: "Anything whatever can be introduced into discussion by means of a singular, definitely identifying, substantival expression. Yet, among things that can be referred to, i.e. among things in general, particulars have traditionally been held to occupy a special position" (1963, p. 136).

must be *one* thing. But the sense in which we can say that Stanley is *one* seems to be a lot weaker than the sense in which we say that some of Stanley's parts are *one*. My left sneaker, for instance, is composed of material parts that are relatively close together in space-time and bound together by some kind of physical or chemical bonds. As a result, I can use it to knock a glass of water off the table by throwing it across the room.[7] The relations between *Stanley's* parts that make Stanley into a unit do not seem to be nearly so binding, and the only thing we seem to be able to do as a result of their "unity" is to mentally group them together and say fairly uninteresting things about them.[8] Furthermore, the sense in which Stanley has being or *is* differs markedly from the sense in which, say, the Andromeda Galaxy *is*. For instance, the Andromeda Galaxy is part of the actual world. I can point toward it, and even observe it with the naked eye on sufficiently clear nights. It takes part in causal interactions (or at least could do so) such as merging with other galaxies. Stanley, on the other hand, does not exist (since one of its essential components does not), and, taken as a whole, does not clearly have any abilities to interact causally with anything else.

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[6] For instance, "Stanley has more members than Thomas (the collection of the Andromeda galaxy and my left sneaker)" or "Stanley is not identical to Linda (the collection of the Andromeda galaxy and the relation of motherhood)."

[7] Note that the parts of my sneaker might be its commonsense parts; they might also be its microphysical parts (e.g. atoms). There are interesting arguments for the view that even an apparent individual like my sneaker can be called an 'individual' only improperly. On accounts like van Inwagen's (1990), for example, the only individuals that exist are living organisms and material simples. Artifacts, like my left sneaker, and non-living natural objects like rocks, are nothing but "arrangements of simples" (p. 108). Trenton Merricks (*Objects and Persons*, 2000) makes a case for a similar conclusion, but using different arguments. He employs a thesis called "the overdetermination of causality" to say, for instance, that since the atoms arranged rockwise (what we would normally call a rock) are what cause a glass of water to topple from the tabletop, the rock could not cause the same event to take place on pain of causal redundancy. But since rocks have no non-redundant causal powers, they do not exist (See Olson's Critical Notice: "The Ontology of Material Objects" (2002)). These issues will be discussed more fully in the second section of the present chapter.

[8] The sense in which Stanley is one will presumably be related to the sense in which the members of any arbitrary grouping of entities are one. We can draw a further distinction here between the (truly) minimal cases in which the members of a group or class are one simply in virtue of their belonging to the same group, and the cases in which members of the group are relevantly similar to one another, so that their grouping is non-arbitrary (or at least *less* arbitrary). The unity of the latter group seems to be, however ephemeral, at least more robust than the unity of a group like Stanley. More on this will follow.

As we have seen, Russell holds the words 'unit', 'individual', and 'entity' to be synonyms for his 'term'. According to Lowe (2003), however, we ought to keep these words separate. In the following passage he makes a few important distinctions to which I will be returning later in this section.

> There are three key terms whose application may easily be conflated…
> 'individual', 'object', and 'particular'. None of these terms has an
> application as general as the perfectly general term 'entity' (or 'item'),
> which can be used to denote anything whatever that does or could
> exist. The term 'particular' is generally used in opposition to the term
> 'universal' – particulars being entities which instantiate (are instances
> of) universals, on the assumption that universals do indeed exist. The
> term 'object' (or 'thing') is generally used in opposition to the term
> 'property' – objects 'possessing', or being 'bearers' of, properties and
> properties being 'borne' by objects. Properties, however, may either be
> conceived to be particulars (when they are commonly called 'tropes') or
> else be conceived to be universals. Finally, the term 'individual' denotes
> something that has 'individuality' or, in other words, something that is
> 'individuated', in the metaphysical sense explained above."[9]

According to Lowe, the meanings of 'object' and 'particular' should not be run together with the meaning of 'individual' since they are to be understood as correlatives to distinct contraries – 'property' and 'universal' respectively. Furthermore, although 'entity' and 'item' are synonymous with the Russellian 'term' (*modulo* the caveat in footnote 4), we ought not to conflate these with 'individual' either. Rather we ought to reserve the term 'individual' for the purpose of denoting something that is metaphysically (as opposed to epistemically) *individuated* – that is, something possessing a principle of individuation that makes it to be one thing, and the very thing that it is, as opposed to any other.[10]

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[9] Lowe, E.J. "Individuation," in *The Oxford Handbook of Metaphysics*, Loux & Zimmerman eds., p 77.
[10] We might ask how much knowing that an object possesses a principle of individuation tells us about what we're dealing with. We might assume that a necessary condition for something to be metaphysically individuated is that it be actual. How, after all, could a non-existent principle of individuation function? But arguably, even when we think

As will become evident, I follow Lowe to a significant extent in his characterization of the intensions of 'object' and 'particular', though I attempt to elaborate on the summary presentation he gives in the quotation above. My main point of contention concerning Lowe's demarcation of the intensions of these terms concerns the intension of 'individual'; for there seem to be well-entrenched uses of 'individual' that do not require that the entity denoted by the word possess a principle of individuation.[11]

The following table delineates the various senses of 'individual' that will emerge from the discussion that follows, going from lesser to greater degree of robustness:

1.	**A Singular Entity**	An entity possessing individual or numerical unity and capable of being a determinate cognitive content or logical subject.[12]
2.	**A Particular**	A non-instantiable instance of some determinate kind.
3.	**A Concrete Particular**	A particular existing at some unique spatio-temporal location.
4.	**An Object**	An intrinsically unified concrete particular which is ontologically independent.

Table 1: Senses of 'Individual'.

In the following three sub-sections I will seek to explain the principled differences between the kinds of individual denoted by each of these senses. The category of individuals that will be of greatest interest for the rest of my project is the sense given by the term 'object'. There has been

about Pegasus we are thinking of something individuated or possessing individuality. Throughout this discussion, I will refrain from making actuality a requirement for membership in any of the sub-categories of 'individual'. It seems unproblematic to say there are or could be (merely) possible individuals belonging to most, if not all, of these kinds.

[11] In other words, I agree with Russell that there is an important sense of 'individual' that is synonymous with 'entity', 'item', and 'term', and see no reason to exclude this sense from the outset.

[12] The latter phrase is from Strawson's *Individuals,* p. 183ff.

a good deal of controversy in recent literature concerning whether certain individuals or entities commonly thought to exist do in fact exist. It is my view that what is really taking place is that the force driving the claims of authors who deny existence to certain types of individuals comes from their view that all and only those items that meet the criterion given in the above description to count as objects, combined with the assumption that anything that is not an object does not exist. The second section of the present chapter will bear out this claim.

2.1.1 The General Intension of 'Individual'

There are several philosophical issues concerning individuals. Arguably, before any of the others can properly be addressed, we must deal with the issue of the intension of the concept of individuality. That is, we need to have a fairly clear idea of what it is to be an individual, in the most broad and general sense. Gracia (1983, 1988) has produced a neat summary of much of the thought on this topic. He argues that among six features that have been considered by metaphysicians to be central to something's being an individual, only one – non-instantiability – provides a necessary and sufficient condition of individuality. I will briefly consider each of the five characteristics that Gracia dismisses, followed by the one he accepts.

(i) *Indivisibility.* It has been thought that to be a genuine individual, an entity must be such that it cannot be divided into entities of the same specific kind as itself. So, for example, a dog is indivisible in this sense, since the parts of a dog are not dogs. The universal 'man', on the other hand, is not indivisible, since it divides into units specifically the same as itself (namely, men). A collection, like a pile of stones, or a homogeneous quantity of matter like a gallon of water, seem

to be individuals that are divisible into units of the same kind, and so they seem to provide counterexamples to the indivisibility criterion. But one might deny this by claiming that though the particular gallon of water is divisible into smaller portions, it isn't divisible into other *gallons* of water, and similarly, a pile of ten stones is not divisible into further piles *of ten stones*, though it is divisible into (say) two piles of five stones. But Gracia argues that we can't save the indivisibility criterion in this way because there could be an infinite collection of things which would be an individual and yet would be divisible into other infinite collections.[13] The only way to preserve the criterion, in light of this kind of counterexample, is to modify it by adding that the original entity must not perish or radically change as a result of the division. But even if we do this, says Gracia, we still face the problem that the basis of the distinction between individuals and universals is flawed, since a universal is not divisible into instances that are members of the same specific kind as itself. When we call a particular man "a man" we are saying that this particular entity belongs to a certain class. The species 'man,' however, "cannot be a member of a class which is identical with itself." Since a class cannot be included as an instance of itself in the way in which its particular instances are included, we have to jettison the idea that individuality is indivisibililty.

(ii) The second proposed criterion of individuality is what Gracia calls *Distinction*. The idea here is that if something is an individual then it must be numerically distinct from all other entities, including those of the same kind as itself. The problems with taking this as a necessary and sufficient condition of individuality are (a) that there could be a universe containing only

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[13] It should be noted that we have another option here. We can say that the fact that collections and homogeneous parcels of matter fail to satisfy the criterion of indivisibility as stated shows that we should not consider them as genuine individuals. Indeed, Lowe (2003, p.78) says something like this.

one individual, but any individual occupying such a universe would not be distinct from anything,[14] (b) that numerical distinction presupposes individuality rather than vice versa, and (c) that individuality is an intrinsic feature of whatever has it, while distinction is an extrinsic relation.

(iii) The third option is *belonging to a group (or a class or a set)*. Gracia calls this *division*. But the ability to belong to a set which has multiple members cannot be the measure of individuality because we can conceive of individuals which do not belong to any group. Angels, for instance, were thought by medieval theologians to be species unto themselves.[15]

(iv) *Diachronic identity* – the ability to remain the same across time and through certain kinds of changes – has also been taken to be the decisive factor in determining whether something is an individual. A difficulty here is the possibility of an instantaneous individual which would, by hypothesis, endure neither through time nor change.

(v) Finally, some have tried to express the core of individuality by appeal to the characteristic of *impredicability*, the individual being defined as that which can be a subject of predication but cannot be predicated of anything else. But while it is true to say this about individuals, it is only a

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[14] Though if 'distinction' is spelled out as "for all y, either y is distinct from x or y *is* x," then this *is* satisfied by a universe with only x in it. Furthermore, it is not entirely clear why the sole occupant of a given universe could not be distinct from individuals in other possible universes.

[15] Traditionally, to say this would not be to say that angels can't be taken together as a group (the group of the angels) but that they do not share the same essence, and so any grouping of them is only based on non-essential properties and so relatively arbitrary in a way that grouping dogs together in virtue of their common essence is not. If one does not like the angel example, the same point can be made based on a Leibnizian account of the nature of any individual substance.

logical feature of them as opposed to the ontological feature we are seeking in asking about individuality.

Gracia concludes that the only feature that gives a necessary and sufficient condition for something's being an individual is its *noninstantiability*, that is, the impossibility that anything should instantiate an individual. Noninstantiability, unlike indivisibility, is what truly makes the difference between individuals and universals since universals are precisely those things that are instantiable (by individuals), while every individual is an instance of some universal.[16] Noninstantiability does not require duration through time or change, unlike *identity*. Furthermore,

> it is an ontological feature [unlike *impredicability*], and it is independent both of the specific kind of thing the individual is [unlike *indivisibility*, which is at best a necessary condition of *material* individuality and unlike *division*, which requires the individual to belong to a group of more than one] as well as of the kind of universe to which the individual belongs [unlike *distinction*, which holds only in a universe with more than one individual].[17]

So, according to Gracia, being noninstantiable is the only truly fundamental feature of individuals as such. Gracia argues further that instantiability and noninstantiability (universality and individuality) are (a) "exhaustive and mutually exclusive notions" such that "everything is either one or the other, but not both" and (b) primitive and unanalyzable: "Any analysis of them," he says, "will necessarily be circular; that is, it will contain a reference, explicit or implicit,

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[16] We might wonder how this use of 'universal' and the treatment of universals as classes in (i) is compatible with the possibility of individuals that do not belong to any group raised in (iii). Gracia might respond by saying that the former is his own view, while the latter is a view he himself does not ascribe to, but in the absence of an argument to the contrary, this should be admitted as a conceptual possibility and thus as a potential objection to seeing divisibility as necessary for individuality.

[17] Gracia (1983), 57-58.

to one or the other."[18] This does not entail that the five features dismissed are unimportant in a consideration of individuals – indeed some of them seem likely to be features that belong necessarily to the individuals of *our* world – but only that they do not tell us completely and unequivocally what it is to be an individual, as noninstantiability does.

While I agree with Gracia that features (ii)-(v) are not sufficient to give us the general intension of individuality, I find his identification of individuality with noninstantiability problematic for a few reasons, and although I would not appeal to indivisibility in (i) – at least not as formulated – to provide the sought-for intension, I do think it is on the right track to the correct general sense of 'individual'.

First, consider noninstantiability. As noted, Gracia sees individuality as the correlative concept of universality. Instantiability belongs to universals in virtue of the possibility of multiple particulars being exactly similar in certain respects. When, for instance, two electrons share exactly the same charge, *C*, a way of explaining this is by saying that the universal property of possessing *C* is instantiated in each electron.[19] But conceiving of individuality as non-instantiability, and thereby making the notion of individuality essentially dependent on the prior notion of instantiability – the defining feature of universals – might be viewed as seriously problematic by someone who doubts the existence of universals. A nominalist might have principled reasons for thinking the notion of instantiability, together with the accompanying

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[18] Gracia (1988), 235.
[19] The possibility of exact similarity is one of the phenomena thought to be explained by appeal to universal properties. There are others (see Swoyer's (1999) "Properties"). Note that exact similarity between *multiple* individuals cannot be involved in any case of instantiation since it is also possible that a universal be instantiated by

notion of a universal, are incoherent. In that case, a conception of individuality given in terms of the negation of instantiability would be singularly unattractive. In light of this, it seems to be preferable, in accordance with the constraints on optimality given earlier, to develop a conception of individuality that is neutral in regard to the problem of universals, a conception, in other words, compatible with the view that *everything* that exists is individual. But where could we find a conception of individuality whose extension covers all the entities we wish for it to cover and yet does not proceed by opposition to universals or depend on any conception of them?

I think the relevant conception is to be found in the notion of singularity or 'individual unity'. Singularity is the complement of plurality, so that necessarily, if an entity is singular, it is not many. We might say, on a certain interpretation of what it is to be a collection (at least a collection containing more than one member), that a collection is essentially a plurality (essentially many things, rather than a single thing).[20] Quantities of physical stuff like water or gold might be another example of something properly thought of as a plurality rather than a unit, in the sense that *what such a quantity is* is a multiplicity of things (water molecules, gold atoms, etc.). Possession of individual or numerical (as opposed to specific) unity entails being one – a single entity. Notice how this harkens back to Russell's description of a term as something that can be counted as one.[21]

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a single individual only (and, possibly, a universal might go completely uninstantiated, and nevertheless be instantiable). The notion of instantiation will be discussed in significantly greater depth in Chapter Three.

[20] Singleton sets and the empty set would require a different treatment.

[21] I take the fact that the intension of individuality, in the sense I am trying to give it here, corresponds to a large degree with the notion of a Russellian term to be a point in favour of it.

A sort of ambiguity appears here, since we have ways of calling something one which, from another point of view, we might want to call a plurality. A flock of fifty sheep can be thought of as one thing – a flock – yet if it is asked what the flock *is* (ontological is), the correct way of answering the question is to say that the flock is just the fifty sheep that make it up. We can mentally group them together and refer to them with the singular substantive noun 'flock', yet for all that the ontologist might not want to say that flocks exist (or if they do, they are essentially plural entities). But even though we see a group of creatures like a flock of sheep as a plurality, we may have reason for thinking of them as an individual, insofar as the conjoint action of the sheep imitates in some respect the activity of a genuine individual. The movement of certain schools of fish, for example, definitely could give the impression to a hungry predator of being a single entity. If these grounds were strong enough, we might use them to distinguish the kind of unity possessed by a flock of sheep from that possessed by collections like Stanley, or by a collection of fifty sheep, no one of which is within ten miles of any other.

To be an individual, then, in the general sense I am advocating, is to possess numerical unity, whether the unity is actual or only an artifact of the way we think of things. In the latter case, it will be possible for a number of things which are in fact a plurality to have numerical unity bestowed on them by our conceptual capacities. In the case of such an entity, it will be a matter of choice whether we see it as a plurality or as an individual. When we do see it as an individual, it might be argued, our ability to do so is parasitic on our practice of picking out more robust individuals – those possessing objective or 'intrinsic' numerical unity. In the following sub-sections the notion of 'instrinsic' unity and its contrary, 'extrinsic' unity, will be further developed.

Now, as Gracia himself points out, unity is a very broad notion. He argues against appealing to unity to characterize individuality on the grounds that to do so is uninformative, given the various types of unity that can be considered.[22] "[T]o capture the essence of individuality," he writes, "we must go beyond that very general term and say that this individual unity consists in non-instantiability."[23] But in addition to its lack of neutrality in regard to the question of Universals, conceiving of individuality as non-instantiability seems to be problematic in other ways as well. For one thing, saying that a given entity is non-instantiable seems to be subject to the same charge of uninformativeness raised by Gracia against singularity conceived as possession of numerical unity. We might ask what cognitive difference it would make to know of some entity that it is impossible for it to be instantiated. A property given in purely negative terms (in this case by negating instantiability) does not give us any indication of what, positively, possession of this property amounts to. In virtue of what fact(s) about the individual is it true to say that it cannot be instantiated?[24]

Conceiving of individuality in the broadest sense as singularity still excludes some entities, namely whatever entities cannot properly be conceived of as individuals (entities that are essentially plural). Collections, for instance, and perhaps sets or even universals themselves, if

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[22] 1988, 55. Among them he lists conceptual, mathematical, formal, structural, substantial, spatial, temporal, organic, and class unity. But there seems to be no obvious problem with having a general concept which is susceptible to various divisions, or even with having a family of connected concepts, so long as there is something that links them together, in virtue of which the various kinds count as kinds of unity. For the charge of uninformativeness to be effective, Gracia would have to show that no such link exists.
[23] Ibid.
[24] Gracia does take some steps to address this kind of charge by claiming that the negative characterization actually stands in for a more positive ontological property (ibid, 55-6). My only point here is that if one rules out singularity as providing the intension of individuality on the basis of uninformativeness, one would have to use a double-

conceived as identical with their members or their instances, seem to be essentially plural. Of course if any of these entities is reified – conceived as a unified entity existing somehow in addition to its members or instances – then we would have to include it as an individual. And indeed it seems quite possible to conceive of such entities in this way, as determinate cognitive contents – the Platonic Forms or Ideas being a very clear example of such a conception. The only way to justify refusing individuality (in the sense of singularity) to collections, sets and universals, then, would be to argue that there is in fact no coherent way of conceiving of them as units in their own right. But given that (when so conceived) they have properties which are not possessed by their members or instances, it seems to follow that they cannot be identical with those members or instances, and so are at least conceivable as individuals.

But even if we admit collections, sets, and universals as proper referents of count nouns and possessors of individual unity, there are other entities which we might still want to exclude. I have in mind here the quantities of homogeneous matter mentioned earlier – 'parts of stuff,' as this category is sometimes labeled. In this case we may have an example of a kind of entity which is non-individual. Parts of stuff cannot be referred to using a count noun, as we use to refer to a fish, a number, or a puddle, but only by using a mass noun, like 'water' or 'gold'. The fact that there isn't a proper way of talking about these as individuals may be indicative of their ontological status.

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standard to then count non-instantiability as doing so. Non-instantiability remains uninformative until the positive ontological property is characterized.

It would seem odd to give an affirmative answer to the question, "Is this water an individual?" Our considered view should, instead, be that this water is *many* individuals - that is, many water molecules that happen to be tied together by certain chemical bonds. 'Waters' cannot be counted. Looking at the water pooling in different places on my driveway I cannot sensibly say that there are five waters present there. At the same time, there may be reason to think this distinction somewhat artificial, since it does not seem nearly as odd to give an affirmative answer to the question, "Is this *puddle* of water an individual?" where the puddle in question might be identical to the water referred to in the original question. Puddles *can* be counted; there can be five puddles on my driveway after a rain shower. It might seem then that the distinction between a genuine individual and stuff is merely a verbal one.

One way of replying to this would be to say that as a matter of fact, a puddle is not an individual, even if we seem to be capable of referring to it as if it were. Though we can mentally put boundaries around this particular portion of stuff and give it a label, and though the water molecules picked out are relatively close to one another in space and connected by chemical bonds, when properly considered, a puddle is a plurality, and not an individual (at least not a *genuine* individual).

Lowe (2003) distinguishes between "entities that may properly be described as being 'individuals' or as having 'individuality' " and those which fall short of being proper individuals by claiming that the former but not the latter possess (a) 'intrinsic unity' (and are therefore

countable), and (b) determinate identity.[25] A given quantity of water would fail to be a genuine individual because it is "decomposable by indefinitely many different principles of division into smaller quantities of the same kind and requiring no spatial connectedness among their parts." So a quantity of water (or of some other type of material stuff) would fail to meet (a) even though there might be no question about its being determinately identical with itself and distinct from any other thing, thus satisfying (b). And, says Lowe, certain entities – like the two electrons orbiting the nucleus of a particular helium atom – might satisfy (a) in virtue of being genuinely countable, while failing to yield appropriate conditions for enabling us to discern the determinate identity of the one from the other. Taken together, then, (a) and (b) seem to give us criteria for being (metaphysically) individuated, and thus for being an individual.

Criteria (a) and (b) do seem to capture important intuitions about what we would like to count as individuals. Yet, like Gracia's noninstantiability, they do not capture the broadest sense of individuality. In the case of Lowe's criteria, the problem is with making *intrinsic* unity a requirement. Intrinsic unity is unity that obtains independently of human thought or conceptualization. But there is also extrinsic unity, a kind of unity I have been hinting at in the preceding paragraphs, which is imposed on entities by a knowing subject.[26] We would be unable

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[25] Lowe (2003), 78.

[26] For more on this distinction, see Newman, A. (1992), p. 166ff. I realize that my use of 'intrinsic' and 'extrinsic' may not be entirely standard. Specifically, 'intrinsic' is often contrasted with 'relational'. In a sense, this contrast does hold true in the case of my use of the terms, though the relation involved in extrinsic unity always obtains between some objects and the mind that brings them together. The distinction I intend to capture is along very similar lines to the one drawn by Leibniz:

> That which is one *per se* is one from the nature of the thing. That which is one *per accidens* arises when many entities are conceived in the manner of one by a single act of mind, like a pile of logs (*A* VI, iv, 401).

> [A]n aggregate is nothing other than all those things from which it results taken at the same time, which really have their unity only from a mind, on account of those things which they have in common, like a flock of sheep (*GP* II, 256).

I have borrowed these examples from Lodge's (2001) article, "Leibniz's Notion of an Aggregate," p. 470.

to make sense of much of our discourse if we were unable to appeal to individuals unified extrinsically like armies, flocks of animals and piles of sticks. The broadest notion of individuality, it seems, should extend even to entities unified only extrinsically. A collection, such as Stanley (the collection of my left sneaker, the Andromeda galaxy and the round square), if not essentially plural, would be an individual in this sense. The only thing that unites Stanley's parts is that we can think of them all together.

There may seem to be a problem here since there could be other collections which, unlike Stanley, have not yet been thought of, and which would nevertheless seem to possess just as much unity as Stanley himself does. The fact that one such collection has been thought of by someone and another has not seems to play no obvious role in determining whether they exist or what members they have or anything else about them. My response is that if the only kind of 'unity' we acknowledged was intrinsic unity – unity that comes from the thing rather than from us – then it would be true that unthought-of collections possess just as much unity of that kind as Stanley does – namely, none. In other words, a collection is simply not the kind of thing that has unity from itself. The real problem with Stanley – or with any (mere) collection – is that there is no real (extra-mental) relation holding Stanley's parts together as a unit. We might attempt to say that all collections, whether thought-of or not, have in common that their parts or members *can* be thought of as one, and that it is *conceivability-as-one*, rather than actually being so conceived, that is the source of the unity of every collection. But even then, the fact that the source of unity involves the activity (even if only potential) of some thinking subject goes to show the absence of unity on the part of the collection itself. Of course, the members of some collections may be grouped together by us *because of* certain mind-independent relations that hold

between them. The class of all the atoms making up my goldfish at a given instant in time certainly are bound together in ways that do not depend on what I think about them. But this is something about the atoms, and not about them *as* members of a class.

Possession of intrinsic unity seems to belong necessarily only to those individuals which are "paradigmatic" and can properly be called objects in the sense to be clarified. But we can also make room for a class of entities whose unity is more than merely extrinsic, yet is also importantly distinct from that possessed by objects. My shirt, for instance, might possess intrinsic unity because of the chemical bonds holding its parts together, and yet, though we would not want to say that the unity of the blueness of my shirt is imparted only by a perceiving subject, we would also not want to say that the blueness is on par with the shirt itself. The reason is that, arguably, the unity of the blueness of the shirt depends entirely on the unity of the shirt itself (since if there were no shirt, there would be no blueness). In light of this, we might want to distinguish a type of *dependent* intrinsic unity possessed by such things as tropes. But putting possible varieties of intrinsic unity aside, it seems to be difficult to deny that there are some individuals (single entities) – collections counting among them – which do *not* possess intrinsic unity of any kind. At the very least, we should keep our notion of individuality open to this possibility. For this reason, being metaphysically individuated, in Lowe's sense – which requires possession of intrinsic unity – does not give us the intension of individuality in general.

Essential pluralities – entities that are not properly conceived as units or as referents of a count noun – would still fall outside of the extension of individuality, even in the very thinnest

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sense of singularity or possession of numerical unity. As noted earlier, if collections, sets and universals are regarded as entirely reducible to their members or instances, then they might be candidates for exclusion. Likewise, if 'parts of stuff' are in fact pluralities that do not properly possess numerical unity (singularity), then we ought perhaps to place these too outside the scope of the extension of individuality. In this connection, some philosophers have argued that reference is not always singular, but that there can be irreducibly plural reference. Henry Laycock, in a discussion of the views of George Boolos, writes,

> …the dichotomy of singular and plural, one and many – though it is 'merely' semantical, and not also ontological – is to be accepted as absolute or as such. Semantically, the plural is not the singular writ large. Boolos urges us to abandon the idea that the use of plural forms must be understood to commit one to the existence of sets…. Entities are not to be multiplied beyond necessity…. It is not as though there were two sorts of things in the world, individuals and collections…. There are, rather, two different ways of referring to the same 'things'.[27]

In order to accept this line of reasoning, we are not required to invoke any new ontological category ('the many'). But since we are dealing, in respect of the most general sense of 'individual', with entities that may exist only as objects of thought (and if, following Leibniz, it turns out that the correct way to characterize the existence of things like collections is as mental entities), we can say that at this level there are some entities that are not properly individual – they do not make up *an* object of thought, but rather are object*s* of thought. Some 'things' are (semantic *are*) individuals, others (the beavers in Lake Superior; the rocks raining down from the sky; the jewels in the queen's crown) are, when treated as mental entities, just irreducibly plural. So it seems to turn out that while 'object of thought' is equivalent with that utterly neutral term

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[27] Laycock, H. (2002) "Object" in *Stanford Encyclopedia of Philosophy*. Laycock also briefly discusses Russell's notion of "the absolute diversity of the many," the view that "there is simply *no such object* as 'the many' – no such thing as the logical subject of a semantically plural sentence."

'entity', there may be a fundamental divide between whether some entity is a singular object of thought, or a plurality of objects of thought.

For my immediate purposes, I don't think a whole lot ultimately turns on whether or not we conceive of collections (or universals) as entirely ontologically reducible to their members (or instances) – that is, as essentially plural – or as additional pieces of ontological furniture over and above their members. The point I want to make is that conceiving of individuality in terms of unity allows us to deal with the case of collections or universals *either way.* If they are essentially plural, then they are entities but not individuals, and if they are, in some sufficiently mind-independent sense, unified in their own right, then they are individual entities, and we will say in that case that *all* entities are individual. The advantage of the position I have been advocating over Lowe's view is that, while Lowe is forced to reject the possibility that collections brought together by extrinsic unity can be seen as individuals, thus denying intuitive reasons for seeing them as units, my conception of individuality makes room for this possibility, without necessitating the adoption of a stand on the issue, and even allowing that the difference between seeing such entities as individuals or as pluralities may be only a matter of perspective. The driving force behind this approach is the idea that the more neutral an ontological perspective is in regard to the more intractable metaphysical issues, the better. On the perspective I am advocating, we can also explain the reason for the red intuition-flags raised by entities like Stanley – while Stanley is certainly not an object, we have now distinguished a suitably thin notion of an individual under which even Stanley and his companions may fall, and we can say why they fall under it while respecting our intuitions to the contrary.

To see the intension of individuality as given by singularity or numerical unity – whether it be extrinsic or intrinsic – is a more precise way of characterizing what it is, in general, to be an individual than the ways proposed by either Gracia or Lowe. Conceiving of individuality as singularity allows us to remain neutral on the topic of whether or not universals or collections or parts of stuff are individual, countable entities, whereas both of the rival conceptions force us to take a stand on the issue. But this seems to be something we should not want to do, especially in regard to the issue of universals, since we have ready to hand another concept that can take the role. The concept I have in mind is the concept of a particular, and if the way I am conceiving of the issue is correct, this will involve one step up in degree of robustness from the bare concept of an individual. Even if every particular is an individual, seeing individuality as singularity leaves it as an open question whether all individuals are particulars.

Before moving forward, let me reply to one further objection. I argued that a problem with conceiving of individuality as non-instantiability is that it decides the issue against (some forms of) nominalism from the outset by pre-supposing the intelligibility of instantiability. If, however, I now accept the distinction between particularity and universality (as I do, at least tentatively, in the next section), a distinction which is more or less equivalent to the distinction between non-instantiability and instantiability, what is to prevent the same objection to the distinction between *particularity* and universality from applying just as much as it did to the distinction between *individuality* and universality? This objection helps to bring out what I am trying to accomplish in this section. In case the nominalist is right, and the instantiable/non-instantiable distinction is incoherent (or at least of no use), my position makes available a slogan for her: there are individuals, but no particulars. On the alternative account, which *identifies* individuality

with non-instantiability, the nominalist is forced, in denying the instantiable/non-instantiable distinction, to give up individuals altogether, which is something no nominalist would presumably want to do – indeed her very position is that everything is individual. Since the case against the nominalist's claim has not yet been closed, it is better not to rule it out by the way we use our words.[28]

Another advantage, then, of adopting the neutral position I am adopting is that it puts us in a better position to see what is at issue between the people engaging in the debate between realists and nominalists. Where the realist holds that there are both instantiable and non-instantiable entities, and that this distinction divides the class of individuals, the nominalist limits the class of individuals to the things the realist calls non-instantiable, denying that any instantiable individuals do (or more strongly, could) exist. Since the jury is still out as to which of these parties is correct, we do well to make use of a framework that (although it does not allow us to *resolve* the issue) allows us at least to clearly express the view of each party and to show what is entailed if either side turns out to be correct.

2.1.2 The Intension of 'Particular'

The view of individuality I have proposed would entail that universals themselves (if they exist and are conceived of in a certain way) can be individuals, in a sense, and would therefore require us to provide another term to serve as the correlative of universality. 'Particularity' seems well

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[28] I should add that the position that the instantiable/non-instantiable distinction is incoherent is not by any means the only option for the nominalist, since it is also open to her to say that the distinction itself is fine, but that

suited to take the place of Gracia's 'Individuality' given the frequency with which it has historically been employed as the opposite of universality.[29]

Particulars can be either abstract or concrete. Roughly, the sense of 'concrete' I will be using involves being spatio-temporally located, and being capable of entering into spatial, temporal and causal relations. To be abstract, then, is just to be non-concrete. Though particulars, by definition, cannot be universals, it is possible that they be abstract. Examples of abstract particulars which may not turn out to be universals would be numbers and propositions.[30]

The sense of 'abstract' I am appealing to here is not equivalent to the sense in which Keith Campbell uses the word in his (1990) *Abstract Particulars*. Basing his usage on that employed by D.C. Williams, Campbell says that tropes are abstract particulars, but that this does not imply that they are non-spatio-temporal. For Campbell,

> a concrete entity is the totality of the being to be found where our
> colours, or temperatures or solidities are. The pea is concrete; it
> monopolizes its location. All the qualities to be found where the pea is

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nothing falls under one of its terms: everything is non-instantiable. But it does seem odd to give the intension of a characteristic that belongs to everything by negating another characteristic that applies to nothing.

[29] Gracia himself admits that particularity can function unproblematically as a synonym for his sense of individuality (1988, 54).

[30] One potential problem with conceiving of concreteness as 'being spatio-temporally located' is that we might be unable to deal with entities, like the game of chess or a natural language, or a work of art, which in spite of not being spatially located do seem to have come into being at some point in time, and so seem to be not wholly atemporal (Hale, B. (1998), section 2). Hale notes the alternative suggestion that "concrete objects are those which are, in principle, capable of being picked out ostensively, while abstract objects are those to which we can refer only by means of some functional expression." But this seems not to get at the heart of the matter, since we can always ask, "In virtue of what are we able to ostensively point out some objects but not others?" and the answer would seem necessarily to involve some reference to spatio-temporal location, even if we need to refine the criterion somewhat in the face of the alleged counter-examples.

A further interesting possibility that was pointed out to me by David DeVidi is that concreteness might come in grades – a particular might be fully concrete (spatio-temporal), partially concrete in either of two ways (temporal but not spatial, or spatial but not temporal) or abstract (neither spatial nor temporal). I think this makes sense, though the idea of something spatially located but not temporal is definitely difficult to imagine.

are qualities of that pea. But the pea's quality instances are not
themselves so exclusive.[31]

To say that something is an abstract item is, on Campbell's view, to say by contrast that it can

(ordinarily) occur in conjunction with many other instances of qualities
([for instance] all the other features of the pea…) and that, therefore,
they can be brought before the mind only by a process of selection, of
systematic setting aside, of these other qualities of which we are aware.
Such an act of selective ignoring is an act of abstraction.[32]

While there is certainly a place for the kind of distinction Campbell is drawing, I think using the terms 'abstract' and 'concrete' here is misleading. Campbell's 'concrete entity' is just what we ordinarily mean by an object, and his abstract entities are (particularized) properties or property instances.

And there is an important distinction between items like propositions and numbers on the one hand and dogs and cats on the other, which the appellations 'abstract' and 'concrete' are standardly used to mark. Importantly, in this sense tropes themselves are concrete items, since they are spatio-temporally located and are capable of entering into spatial and temporal relations, as are events and states of affairs. This nuance of meaning is blurred if we use the terms as Campbell does, and to do so seems unnecessary since we already have in place the distinction between object and (particularized) property.[33] And propositions seem to be clear cases of

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[31] Campbell (1990), 3.

[32] Ibid.

[33] Specifically, Campbell's use violates optimality criterion (a) given on p.19 above. Given that Campbell takes objects to be nothing but bundles of tropes, it might be objected that using the term 'concrete' to refer to objects (which, strictly speaking, do not really exist) is question begging against the tropist bundle theory of the nature of objects. But I do not think this is so. Even on the tropist bundle theory, there is a distinction between bundles of tropes and tropes, such that a bundle of tropes is not itself a trope. So there seems to be no problem with calling a bundle of tropes an object.

abstract particulars which are neither properties nor objects (except when the term 'object' is used loosely, in which case it is just equivalent to 'particular', or perhaps even 'individual').

But moving on from this terminological point, an issue of greater substance in determining the intension of particularity concerns the issue of the possession of determinate identity. In our discussion of Lowe above, we noted that he provides two criteria for genuine individuality – possession of intrinsic unity, (a), and of determinate identity, (b). It might have seemed conspicuous that I left out (b) altogether in the discussion of the intension of individuality. But discussion of this topic is perhaps more relevant here. In analyzing the concept of a particular, we have been saying that this concept is much more suited to function as a correlative to the notion of a universal. We are saying that, whatever else it is to be a particular, it is to be an instance of some kind. But to be a kind-instance – to belong to a kind – is to meet certain identity conditions, and in virtue of meeting these, to possess an identity. When it is definite that some individual meets these conditions, that individual will possess its identity determinately, at least in one sense. But some (many) kinds *themselves* bring with them a type of indeterminacy – for instance the kind, 'head of hair', which provides no definite standard for saying whether something belongs to the kind or not. So some particulars (e.g. physical bodies like rocks – as the discussion of the concept of a physical body in Chapter Four will show) fail to have a determinate identity, in this sense, even though as particulars (instances of kinds) they will possess an identity in the first sense. When the boundaries of a kind-concept are themselves indeterminate, then, we ought to say that strictly the identity of the instances of that kind are also indeterminate.

Since kinds are identifiable with sortal concepts or terms, and these in turn are identifiable with, or at least have some important constitutive relation to, universals, sortal concepts themselves are entities that might be classed as individuals, even if they turn out not to be classifiable as particulars (the instances that fall under sortal terms). The identity of particulars, we might say, is conferred on them by the kinds they fall under. But do the kinds themselves *possess* determinate identity? Here again we get into fairly muddy water – it seems as though we could attribute determinate identity only to reified kinds or sortals (the contents signified by the terms), not to sortals taken as essentially plural (the totality of the items falling under the concept). For this reason, since we are not here pronouncing one way or the other on the issue, it seems wise to remain neutral as to whether or not sortals possess determinate identity, even though there will certainly be a way of seeing them as individuals. Any *particular* individual, however, *will* be a possessor of determinate identity (in virtue of being a kind-instance – so at least in the first sense distinguished above even if not in the second sense), and so we find here another reason for drawing the distinction between individuality on the one hand and particularity on the other, as we have done.[34] Of course if one holds that there are no universals or sets or sortals in addition to the individual entities taken to be their instances or members but that all things are particular (non-instantiable) – if, in other words, one thinks that there is no literally common element present in each resembling particular – then one may not find the distinction between individuals and particulars to be very helpful. In absence of a solution to the problem of Universals, however, as I have noted earlier, it is preferable – in accordance with optimality criterion (c) – to be as neutral as possible in this area.

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[34] Another kind of entity that might qualify as unified (and thus countable) but not determinately identifiable,

Finally, it should also be noted that to be a concrete particular, and thus to possess determinate identity, is not yet necessarily to qualify under Lowe's criterion (a), that is, to be a possessor of intrinsic unity. Indeed, as mentioned earlier, Lowe (2003) argues that quantities of matter or parts of stuff are entities of precisely this sort. Though a given quantity of water possesses determinate identity in that it is of a certain kind, it does not possess intrinsic unity:

> …quantities of matter lack intrinsic unity, being decomposable by indefinitely many different principles of division into smaller quantities of the same kind and requiring no spatial connectedness among their parts. The very same quantity of matter may be scattered over a wide region of space, or gathered together into a compact mass. Consequently, there is no clear sense in saying that it is a 'one' or a 'many', in advance of specifying its spatial distribution: and even then, what counts as 'one' or 'many' are the pieces or parcels of matter into which it is divided, not the quantity of matter as such…. [I]t follows that quantities of matter… are not properly described as 'individuals'…. [W]hile something may make a quantity of matter the very quantity of matter that it is, nothing necessarily makes it one quantity, if quantities of matter lack intrinsic unity and are consequently not countable entities in their own right.[35]

If quantities of matter have unity, then, it seems that they have it only extrinsically, because of our decision to divide them into portions of a certain amount and not because of anything they possess in themselves.

Some particulars, then, may not be properly unified at all (as would be the case with any non-instantiable pluralities resistant even to extrinsic unification, if any such entities exist). Others will be unified only extrinsically. Where we draw the boundaries between what entities are unified intrinsically and which are unified merely extrinsically will depend on a variety of factors, and involves considerations relevant to the disputes between realists and antirealists. The notion

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according to Lowe (2003) at least, is a "quasi-object" like an electron in superposition.
[35] Ibid, p. 78.

of a particular seems to be straightforward enough. Since the main focus on this chapter is to explicate the philosophically more important notion of an object, I turn to this task without further ado.

2.1.3 The General Intension of 'Object'

Since, arguably, the standard concept of an object is of something spatio-temporally located, there can be no abstract objects, though there can be abstract particulars. In light of the categories we have set up so far, then, the concept of an object will be the concept of a concrete, particular individual. But an object must also be more than this, since the category 'concrete particular' also includes (if these exist) tropes. We might say, then, that an object is a concrete particular non-property. But this would be rather unilluminating without an account of the difference between an object and a property. This I will attempt to provide, by appealing to a certain notion of ontological dependence below.

Another line that can and perhaps should be drawn between kinds of concrete particulars is the line between objects and events or, more generally, states of affairs. On one view, events are wholly reducible to, or are nothing over and above, their constituent objects and the properties these objects possess. If this way of seeing events is correct, it would give us another respect in which objects are ontologically basic – events depend on objects for their existence in a way in which objects do not depend on events. Of course, since properties are also constituents of events, properties can also be claimed to be ontologically basic relative to events, however since properties are dependent on objects their fundamentality in regard to events will only be

derivative. But it is controversial whether events do in fact depend ontologically on objects (and their properties). The Special Theory of Relativity, for instance, is often seen as depicting 'events' as ontologically basic, and then as characterizing objects as things with appropriate careers (e.g. being involved in continuous series of events). But since I regard the distinction between objects and properties as much more important (and since, if something like a reductionist account of events is correct it would not add much to the conception of objects as independent), I will leave aside further discussion of this topic here.

Being a continuant (something capable of persisting through time and change) is sometimes seen as definitive of objects, but depending on whether or not there could be instantaneous objects (objects whose entire existence lasts only a single instant) this may not be a necessary feature of objects (just as we saw earlier that it isn't a necessary feature of individuals). Furthermore, persistence might not be sufficient for objecthood either. Events, conceived of as changes in or sequences of changes in the properties and relations of objects, would likely turn out to be temporally extended entities.[36] Likewise, properties (whether considered as universals or as tropes) seem capable of persisting at least across time if not across space as well. There does not seem to be any serious problem with conceiving of the brown colour of Fido's fur in the dog-house at noon on Wednesday as being the same brown colour of his fur on the sofa two hours later.

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[36] At least on the intuitive view that any change necessarily takes place across at least two associated moments in time, and usually demarcates a process in which something (the thing that changes) moves from a certain state, *a*, into another state, *b* that is distinct from *a*, *via* the passage of time.

In what follows I will attempt to say what it is that characterizes the kind of individual denoted by the term 'object' and that distinguishes objects from other concrete particulars like tropes. By describing the boundaries of our notion of an object, the stage will be set for discussion of the two ontological debates that will concern us in the second section of the present chapter, and in the third chapter of this thesis. In each case, the notion of an object will be seen to be at the core of the debate, in spite of the fact that those engaging in such debates rarely make sufficient effort to clarify what, precisely, that notion involves. The present sub-section will also suggest, in a preliminary way (to be developed further in the second half of the current chapter, and indeed throughout the remainder of the essay), that our ordinary notion of an object, though at first blush appearing to involve, unproblematically, certain conceptual components (independence, determinate identity, concreteness, actual rather than possible existence, etc.), on closer scrutiny turns out to be a less tight package than we might have thought.

2.1.3.1 Ontological Dependence

An assumption that has been with us so far, and that seems to be a good place to start in attempting to characterize the notion of an object is that 'object' and 'property' are correlative terms, and that the distinction between them is both meaningful and important. But does the distinction between an object and a property mark a real distinction? What I mean to ask by this question is: Are properties distinct from the objects that have them *in reality*, and not only in our minds? It is certainly the case that we can mentally consider some feature of an object in abstraction from the other features of the object (or from the object itself, if the object is

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something more than its features) – we can think of the redness of an apple apart from its juiciness or its sweetness – but does this cognitive ability say anything about the ontological status and relatedness of objects and their properties?

It is an intuitive datum that objects are distinct from properties in virtue of the fact that properties depend for their existence on objects in a way that objects do not depend on their properties – though, to avoid prejudicing the issue of Chapter Three, this must be read as being consistent with the interpretation of an object as a bundle of properties. Objects are entities that *bear* or *possess* properties, while properties are entities that *characterize*, or *are borne by*, objects, however the notions of bearing, possessing and characterizing end up being formulated. For this reason, I will attempt to argue that objects are *independent* concrete particulars, whereas properties are *dependent* particulars and might be either abstract or concrete depending on whether you take them as universals or tropes (another issue on which I am trying to remain neutral).

The relation of ontological dependence usually taken to hold between an object and its properties is the relation of *inherence*. One intuitive, yet flawed, way of spelling out this form of dependence is to say that x depends on y if, necessarily, y exists if x does: $\neg\Diamond(Ex \land \neg Ey)$.[37] Certainly, a property (at least a particular property) cannot exist without the object to which it belongs (the object of which it is the property) existing. (Particular) properties (at least) depend for their existence on objects, and this dependence seems to be asymmetrical; for although

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[37] Fine (1995), 270. I say flawed because, for instance, it is far too generic – even the creature-Deity relation can be expressed by means of this formula, which no one would reasonably call a relation of inherence. Thanks to Prof. Joseph Novak for this point. Two other forms of dependence have been thought to hold between a universal and a particular (in Plato the latter depend on the former (*via* participation); in Aristotle the former depend on the latter

objects need some properties to exist, they do not need any particular properties.[38] We might say, then, that an object depends on properties in a kind of *generic* sense, as opposed to the *rigid* sense in which (particular) properties depend on the specific objects to which they belong. Fine (1995) refers to the above characterization of the rigid type of dependence as the *modal/existential* view. But this view, does not provide the asymmetry we are seeking. It should allow us to say, for instance, that though Socrates exists if the singleton set of Socrates exists, the singleton depends on Socrates *and not* vice versa. But, in fact, the existence of either entails the existence of the other, on the modal/existential view.

To avoid this, Fine suggests we reformulate the view by replacing the notion of necessity with that of essence to yield what he calls the *essentialist/existential* account of dependence:

> One thing x will depend upon another y just in case it is an essential
> property of x that it exist only if y does.[39]

This reformulation avoids the problem of the asymmetry of dependence, since "nothing in [Socrates'] nature or identity… demands that he exist only if the singleton… exist[s]," and thus we do not have to say that Socrates depends upon his singleton. But this view, too, faces problems, which I will not go into in detail here. Suffice it to say that in the end, Fine's preferred formulation is something like the following:

(*via* abstraction), though participation is somewhat mysterious, and abstraction might be a logical, rather than an ontological relation.

[38] This, of course, becomes tricky once we begin to discuss the essential properties of an object, on which an object would seem to depend for its very existence. But the way I would try to wiggle out of this is by denying that essential properties are in fact properties. There is a distinction to be drawn, I think, between what an object is and the ways in which an object is (what the object has or possesses). This might be pretty controversial and fraught, however. I will go on to talk about these in greater detail later in this section, and the issue will also arise in Chapter Three.

[39] Ibid, 272, though not formulated explicitly there as I have done.

> One thing x will depend upon another y just in case y is a constituent of
> an essential property of x (or just in case y is a constituent of a
> proposition that is true in virtue of the identity of x).[40]

According to Fine's account, then, when the essence of some entity x depends on some other entity y, the essence of x will involve y in the sense that y "will appear as a constituent of a component proposition or property" of the essence of x.

To be sure, there is a lot more that could be said about what is going on in this formulation of the notion of dependence. For my purposes, the chief interest of Fine's account is that it draws attention to the fact that ontological dependence relates not only to existence, but also to essence or identity. I do not pretend that the account discussed here is the definitive account of the relation of ontological dependence. But accounts like that offered by Fine seem to provide a way of cashing out the difference between objects and properties, since they offer a more precise way of expressing the idea that a property is necessarily the property of some object, while an object is not *of* anything else in this sense. A property ɸ will be a property of an object O just in case the essence (what-it-is-to-be-ɸ) of ɸ necessarily involves (or makes reference to) O.[41]

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[40] Ibid, 275.

[41] The objection could be raised here that since this works only for particular properties and not for universals (at least not when conceived of Platonically as self-subsistent), I have not succeeded in indicating any fundamental way in which objects are distinct from properties. My response to this is that if universals are indeed self-subsistent, then they are independent in the same way that objects are, and thus the contrast that holds between objects and particular properties would also hold between universal and particular properties. Whether or not we should think of properties as self-subsistent in the sense is, of course, a big 'whether', but since my official policy is neutrality, I note the possibility.

2.1.3.2 Essential Properties

So far I have been considering the distinction between the concepts 'object' and 'property'. But another way to approach the topic is by inquiring about the distinction between a specific object and the properties it possesses. Some kind of modal talk may be helpful here. Intuitively, a property is something about an object (some way the object is or is related to other objects) or something the object 'has' or 'possesses', something that 'belongs to' the object. We might think that we can distinguish a property from the object which 'has' it if it would have been possible for that object to have existed without having the property it does in fact have. Even though x is (in fact) ϕ, it is possible that x might not have been Φ, or that x might continue to exist in the future without continuing to be Φ. We know that Aristotle is distinct from the property 'being a philosopher' because Aristotle (the particular man we refer to as Aristotle) might not have been a philosopher – or at least not a great or very influential one. For instance, his circumstances might have turned out in such a way that he wouldn't have had access to any of the works of thinkers preceding himself – he might have been abandoned by his parents and raised by wolves in the wilderness.

When we say that some object – e.g. Aristotle – could have existed without having some property that it (he) in fact has – e.g. being a philosopher – we could be saying that there is some feature of the object we are referring to which is more truly *what the object is* than the feature the object could exist without. What I mean is that it might not be correct to say of some features or aspects of the object that they 'belong to' or are 'had' by it; instead in these cases it might be more appropriate to say that the object just *is* this or that, where 'is' is not the 'is' of predication (the copula) but the 'is' of identity, or at least that this feature is *part* of what x is. But this is only

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one way of looking at things. Another way of looking at the same phenomenon is to say that all features or aspects of an object are properties, and so are 'had' by the object in the property-possession sense of 'had', yet some of these properties are essential (*necessarily* 'had' by the object) while others are accidental (*contingently* 'had'). Intuitively, an object can exist without some of its properties, but not without all of them – for instance, Fido the dog would no longer exist if the property *being-a-mammal* was somehow (*per impossibile*) removed from him. If Fido stopped being a mammal, he wouldn't be a dog anymore either; to be a dog is to be a (certain kind of) mammal. So, for any object, there seem to be features that it could not exist without (at least not without ceasing to be an object of the kind it was before the loss of the relevant feature). But the question remains whether all such features are properties, or whether sometimes what we are picking out with a predicate like *being-a-mammal* isn't, properly speaking, a *property* of the thing after all, but is simply *what the thing is*.

Let's consider the idea that all features of objects are properties, but some of these are essential to the object and some are not. What it means, at least standardly (and perhaps naïvely), for a property to be essential is that the object wouldn't exist if it didn't possess that property (at least it would no longer be the *kind* of object it was). Mackie (2006) writes:

> To say that not all of an individual's properties are essential to it is to
> say that it could have been different in certain respects. To say that
> some of an individual's properties are essential to it is to say that there
> are limits to the ways in which it could have been different. That there
> are such limits, in the case of ordinary individuals such as people, cats,
> trees, and tables, may seem uncontentious. However, the attempt to
> find a satisfactory theoretical basis for a distinction between the

essential and accidental properties of such individuals has proved remarkably difficult.[42]

Is there any way to get behind the intuitive idea that a man's height would not exist unless the man existed, while the man could exist without being that height? If we think that 'being a man' is a property of something, then a man couldn't exist without at least (that) one property; and 'being a mammal' and 'being an animal' would seem, similarly, to be properties no man could exist without possessing (assuming that they are indeed properties).

But saying that 'being a man' is a property might threaten to blur or even destroy the (at least intuitively) important distinction between an object and a property. Intuitively, all properties are properties *of* something.[43] At the very least, wherever a property is instantiated, it is a property of something, so this much is true even of universals. We don't have free-floating properties that are not anchored to any thing. But if even 'being a man' is a property, then what is it a property *of*? We would have to say, in such a case, that there is some object that exists, and that this object has the property of being a man. To say so would imply that the object in question was something distinct from 'being a man' even if 'being a man' were an essential property of it. But what would such an object be?

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[42] Mackie (2006), v-vi. On essential properties see Kripke, *Naming and Necessity*, pp. 110 ff. The essential / accidental distinction as applied to properties is closely linked, I think, to the real / nominal distinction as applied to definitions. Putnam (1982) discusses this in some depth in "Why There Isn't a Ready-Made World". Mackie distinguishes between essentialism about individuals and essentialism about natural kinds.

[43] More precisely: necessarily, for any property ɸ, if ɸ exists, then there exists some object that has ɸ. An objection to this is that the property 'not identical to itself' necessarily cannot belong to any entity. This raises a lot of further questions, such as whether so-called properties like this one are in fact properties after all, and if not, why not? One reason for thinking that 'not being self-identical' is not a genuine property is that it is a negative property, and a case might be made for thinking that there are no negative properties. There certainly are negative *predicates*, but presumably there is nothing about the entity that corresponds to a negative predicate (except for the fact that the positive properties the entity does have conceptually exclude the negative predicates from applying to it). This reply assumes that properties and predicates are distinct, an assumption Armstrong (1991) certainly makes, and one that I am inclined to make as well. Even if there are genuine negative properties, however, 'not being self-identical' might not be one of them if, for example, 'being self-identical' turns out not to be a genuine property either.

A *Bundle Theorist* might respond that the object, in such a case, is just the bundle of all the properties composing that individual, and that the property of 'being a man' is a property of (that is, 'being a man' is a member of) that bundle, just as much as 'being six feet tall' is. But the point I am making is that the bundle in such a case just seems to *be* the man – if the property of being a man is somehow capable of being removed from the bundle, how would anything in the bundle hold together any longer? How would 'being six feet tall', for instance, be a part of the bundle if there was no man or other kind of creature to be that tall? The alternative would be to accept the bare substratum view – the view that there are objects which have no properties at all, metaphysical coat-hangers on which hang all the properties by which we become aware of these objects, or by which these objects manifest themselves in existence. But if we are to be consistent with the attempt to present as neutral an ontological framework as possible (especially in regard to the fundamental ontological nature and structure of objects), it seems that we ought not to hold, at least not until we have sufficient philosophical argumentation in hand, either that everything about an object is a property of the object (*Bundle Theory*), or that there is something – some featureless ingredient – that exists outside of any of the properties of an object, to which all the features are somehow linked (*Substratum Theory*).

C. B. Martin (1981), whose views will be considered in more detail in Chapter Three, is one philosopher who, adopting a kind of neo-Lockean perspective, attempts to show how the notions of object and property can be correlative concepts in such a way that the distinction between them is retained, without requiring a commitment to either Bundle Theory or

Substratum Theory.[44] John Heil (2003), in Chapter 15 of his *From an Ontological Point of View*, expresses a similar account of objects. The view takes properties (seen as modes or ways an object is) and property-bearers as correlative ideas that arise from abstraction or "selective attention." Heil writes,

> Property-bearers and properties are inseparable. This is not because properties are bonded to property-bearers with an especially powerful metaphysical glue. Rather, property-bearers are objects considered as being particular ways, and properties are ways objects are. In considering an object as a property-bearer, we are considering it partially; in considering its properties, we are considering ways it is, another kind of partial consideration. Properties and property-bearers can be considered separately but they cannot be separated, even in thought.
>
> Let me summarize. Objects are bearers of properties. A property-bearer is not a 'thin particular' to which properties are affixed. A property-bearer itself has all the properties it 'supports' and no more. Property-bearers are not 'bare particulars'. A property-bearer is an object considered as something that is various ways, something that has various properties; properties are ways objects are.[45]

It is not my intention to pronounce, at this point, on whether this view of things is correct. Instead, I simply want to indicate an important conceptual component of our ordinary concept of objects that has great intuitive power. The component I have in mind is just the idea that Heil is expressing in calling objects "property-bearers" or as individuals that exist in "various ways."

But properties, in addition to objects, also seem capable, in some sense, of 'having' properties. For instance, Socrates' height could (if taken as a trope) be said to possess the property of 'belonging to Socrates', of 'being less than the height of Frank', of 'being distinct from Socrates'

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[44] As we shall see, the degree to which he succeeds is arguable. We should also note that according to Martin's preferred ontological story objects do have substrata of a certain kind. But the uniqueness of his account distinguishes it from any simplistic bare particular theory. More on all this will follow in Chapter Three.
[45] Heil (2003), 172-3.

weight'; the blueness of this blue jay has the property 'being contrary to red', and the property of 'being found at such and such a spatio-temporal location', etc. Does this threaten the distinction between objects and properties?[46] One way to deny that it does is by claiming that such properties are not genuine properties. But how do we draw the distinction between which properties are genuine and which are not? To simply state that any property had by a property is not a genuine one would be question-begging. How do we know when a predicate expresses a genuine property, and when it expresses something that makes sense to us but which we would not want to offer membership in existence? A more straightforward way of preserving the distinction in spite of the noted difficulty is by adding that objects, unlike properties – which might also be thought to be capable of existing in various ways – are never themselves borne by anything else. Objects are never ways anything else is. This, of course, is related to the sense in which objects are independent and properties are dependent, and is perhaps only another way of expressing the same idea.

2.1.3.3 Further Concerns About the Notion of an Object

If certain features of an object are either essential to, or more strongly, are in some sense identical to them, such features would be of the sort picked out by sortal terms, terms that pick out something as a member of a kind, rather than mere characterizing terms, which pick out something that can be said truly about the thing, but do not determine it as a member of a

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[46] Another concern which, if it does not threaten the distinction between objects and properties, at least throws a small fly into the ointment is that, although we claimed earlier that all objects are concrete and that only particulars can be abstract, mathematical individuals seem to 'have' properties, and so to be objects, even if the sense in which they have properties is different from the sense in which standard objects do. For instance, whatever properties they have, they seem to have essentially. It doesn't seem to make sense, for example, to ask whether the number seven could persist through change from odd to even, or from prime to composite. Whenever the number seven exists, it is odd and prime. Once again I put off a detailed discussion of the case until Chapter Four.

kind.[47] If you have an object, then you seem automatically to have something that belongs to a kind in virtue of its possession of a determinate identity, which only makes sense, if objects are particulars and particulars possess determinate identity. David Wiggins (2001) argues, in the case of living beings at least, that the extension of natural kind terms applicable to them are determined, at least in part, by the set of laws governing the coming-to-be, growth, development, and ceasing-to-be of individuals of these kinds. The immediate problem with this is that it seems to dismiss the possibility of having an object that is *one-of-a-kind*. On a nominalist ontology, each object is one-of-a-kind. But is there a way of spelling out kind-membership of objects in a way that would be both compatible with saying that there are real, common, law-governed dispositions and propensities in distinct individuals which ground the (equal) application of kind-terms to them, *and* with a nominalist ontological perspective? Whether there is or not, it is difficult to deny that objects are determinately identifiable and, in virtue of their identity conditions, fall under kinds – whether kinds are construed as genuine universals or as resemblance classes.

Related to the question of identity conditions for objects is the problem of whether there can be overlapping objects. The standard case in which this problem arises is the case of a statue (made of bronze or something else) which seems to possess different modal and historical properties, and hence distinct identity conditions, from the lump of bronze that composes it.

> The lump, but not the statue, would survive dramatic alterations in shape; the statue, but not the lump, would survive replacement of the matter making it up [e.g. the bronze making up the nose is replaced by

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[47] Properties corresponding to predicates like 'being within ten metres of the North Pole' do not determine classes of things that belong to one kind, since the things that meet the criteria given in that expression at any given time may easily be of widely divergent kinds (a polar bear, a radio, a reindeer, a sleigh, etc.). For more on natural kinds see Hacking (1991) "A Tradition of Natural Kinds."

another nose-shaped piece of bronze]. This is sometimes put by saying that lumps of bronze and statues have different 'modal properties'.[48]

And this seems to hold in spite of the fact that they share all their intrinsic properties (shape, shininess, mass, etc.). The lump existed on Monday, but the statue did not come into existence until Tuesday – hence the two also differ in their historical properties. According to Leibniz's principle of the 'Indiscernibility of Identicals', we must say that the statue and the lump are distinct objects which "coincide spatially for a period of time."[49] But this seems to introduce a flavor of strangeness into our ordinary notion of a physical object, which seems to require that only one object at a time can take up any particular spatio-temporal region.

Finally, some objects are non-existent, whether they are fictional entities like Sherlock Holmes, or simply as yet undiscovered citizens of possible worlds. Is fictional possession of a property, or possession of a property in a non-actual possible world the same as possession of a property in the actual world? There seems to be no principled reason for saying it is different, qua property-possession. And the same goes for the other distinctions as well. Whether or not an individual is dependent or independent, is particular or universal, is singular or irreducibly plural, is concrete or abstract, or has a determinate identity or not will be unaffected by whether the object exists in the actual world or only in some possible world.

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[48] Heil (2003), 181
[49] Ibid, 183.

2.1.4 The Definition of an Independent Concrete Particular

In spite of the initial glimpses of difficulties encountered toward the end of the previous sub-section, I suggest that the overall discussion provided there gives good reason to adopt the following working formulation of the notion of an object, in the philosophically significant sense:

$$\text{Object} =_{\text{df}} \quad \text{An intrinsically unified, ontologically independent concrete particular.}$$

This definition can be understood in the context of the various metaphysical distinctions that have been discussed throughout this section. As a singular entity, an object will be an individual; as something whose parts form a whole without the need for any cognitive activities to join them, it will be intrinsically unified; as a *locus* and bearer of properties, it will be ontologically independent; as spatio-temporally located and capable of entering into spatial and temporal relations it will be concrete; and finally as a particular it will be a non-instantiable instance of some definite kind.

It has not been the aim of this section to show that the general conception of what it is to be an object formulated above is *correct*. Instead, I have attempted to distill from various disputes within ontology a formulation of the notion of objecthood that includes all the significant marks of the notion as it occurs, usually quite inexplicitly, in our commonsense ontological framework, as well as in various philosophical disputes. The importance of the conception expressed by the definition I have given will be illustrated in the following section *via* the observation that one important dispute in ontology can be recast as the search for the true extension of this conception. Chapter Three will examine the three main attempts that have been made to provide

a general *ontological assay* of objects, understood in roughly the sense given by the above formula, and will conclude that none of them is ultimately adequate. Chapter Four will suggest a new way of approaching the conception of objecthood that will offer a possible avenue for advancement in the ontological disputes discussed in Chapter Two, section two, and in Chapter Three.

2.2 The Extension of 'Object'

In this section, I examine the contemporary debate about whether artifacts, and other inanimate compound physical objects, exist, as this debate has taken shape between proponents of positions represented here by Wiggins, Hoffman & Rosenkrantz, and van Inwagen. My main argument will be that the topic of the debate can be more fruitfully viewed as concerning what kinds of entities the term 'object' – in the sense given to it in section one – correctly applies to. In a sense, then, the debate can be seen as an attempt to determine the limits of the extension of that notion.

The debate to be canvassed here is not a new one by any means. It is traceable at least back to Plato and Aristotle, and throughout the history of philosophy has been a recurring theme tackled in a number of different ways. Historically, the problem would be more appropriately described – using Aristotelian terminology – as the problem of whether certain names we use denote entities that fall under the category of substance. More specifically it is the problem of determining, given that individual substances are ontologically basic, what kinds of things count as individual substances. The notion of an intrinsically unified, independent concrete particular captures a number of the marks that Aristotle wanted his 'individual substance' to capture, but

without presuming the correctness of the entire Aristotelian categorial schema. Early modern philosophers were obsessed with the notion of substance. Even Kant, in his own way, saw the central importance of the idea – if not for ontology proper, then at least for our ability to conceptualize reality. The fact that we find roughly the same notion lurking in the background of important contemporary debates in ontology is, I think, a sufficient testimony on its own to the (lastingly) central importance of this notion.

2.2.1 Kinds of Objects

The category 'Object' is susceptible to division in various ways. One might consider that there could be physical and non-physical objects, for instance. I will not pursue the intelligibility or the basis of this division here, but will simply be dealing with physical objects.[50] We might also divide objects into simple and compound. For the time being, I will not say much about this division either (though the question of simple objects will be important for an attempt to present a coherent Bundle Theory in the next chapter). For now, I will simply say that I do not see any particular problem with admitting the conceptual possibility of point particles or Democritean atoms (indivisible extended particles), but for my purposes here it will not be necessary to discuss them in any detail.[51] I will be considering only compound physical objects.

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[50] I remind the reader that even if all objects are physical objects, it is not necessary that all objects are *actual*. Pegasus, or David DeVidi's third arm, though merely possible objects, would nevertheless still be physical objects on the neutral view I am adopting, since *if they existed*, they would be physical. In other words, in any possible worlds in which these items exist, they are physical objects.

[51] We might, however, want to consider physical simples as a limiting case of the unity of a physical object. Being literally indivisible, there is no way to create or destroy them by assembly or disassembly.

Within the sub-category of compound physical objects, we can draw further distinctions. Hoffman & Rosenkrantz distinguish between objects that are capable of enduring through mereological change (change in parts) and those that are not. The latter (namely mereological compounds, such as a lump of clay) necessarily include all of their material components.[52] The parts of a mereological compound need to be bound together by forces according to the following principle:

> Discrete material objects P1…Pn are united into a mereological compound at a time t ↔ at t, P1…Pn are connected via the joining relation.[53]

The joining relation appealed to is, roughly, a relation of dynamic equilibrium holding between the parts of a mereological compound x which makes it the case that any of the parts of x can be pulled or pushed in a given direction by means of some other part of x being pulled or pushed in that direction.

Here I will indulge in a minor digression. I think that Hoffman & Rosenkrantz's conception of a mereological compound is incoherent, and the following is my argument for why this is so: (i) a mereological compound can suffer no change of parts (even of a miniscule piece of matter) without ceasing to exist, (ii) any macroscopic composite material entity, at a sufficiently low (molecular, atomic or sub-atomic) level, is constantly gaining and losing parts; given only a very small interval of time some such change is nearly guaranteed, under normal circumstances, (iii) at least very many mereological compounds are macroscopic composite material entities, and (iv) the criterion of identity for the unity of any mereological compound is spelled out in terms of

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[52] Depending on whether or not properties are taken as proper parts of objects, mereological change can also include change in properties or 'qualitative change'.

ability of parts to be pushed or pulled by other parts, yet pushing or pulling (being actions of some kind) necessarily must occur in time. So the criterion for determining whether or not an entity is a mereological compound is one that cannot be put into practice – it cannot pick out any enduring individuals.

The reason this is important, however, is that I think there is something worth preserving in the principle of unity Hoffman & Rosenkrantz applied to mereological compounds. If only the requirement that no mereological change is possible is relaxed to some degree, the same principle of unity will be useful as applied to a wide variety of naturally occurring inanimate physical objects like stones and diamonds. Our conception of physical bodies is a conception of a continuant – of something that endures through time, while the conception of a mereological compound (if the above argument is correct) is a conception of something that, strictly speaking, cannot endure through time. More on the notion of a modified mereological compound (a physical body, as I will be calling them), is presented in Chapter Four.

Objects that *are* capable of enduring through mereological change, seem, by that fact, to be more robust – it takes more to disrupt their unity and existence than the loss or acquisition of a microscopic part. Such objects can be further sub-divided into living and non-living (though this distinction is not always entirely clear), and the non-living branch can be divided once more into artifacts (like hammers, houses, statues and thermometers) and inanimate natural formations (like glaciers, mountains, crystals and rivers).

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[53] Hoffman & Rosenkrantz, (1997), 86.

All objects seem to possess intrinsic unity, and the distinction between the various kinds of physical object seems to rest (at least on one way of seeing things) on a distinction between the kinds of intrinsic unity they possess. Given that principles of (intrinsic) unity are usually appealed to as a way of giving criteria for membership in a given type of object, an attempt to disentangle the criteria used by different philosophers will need to distinguish different principles of unity. Certainly some objects appear to be more (intrinsically) unified than others. A diamond, for instance, seems to possess a greater degree of unity than a piece of quartz in that it is much more difficult to separate the diamond's parts from one another. But there also seem to be principled grounds for thinking that in addition to acknowledging different *degrees* of unity among objects, we should also acknowledge different *kinds* of intrinsic unity. Locke famously noted that we cannot track living creatures through time by tracking their constituent material parts – as we do with masses of matter – since living creatures persist through change of material constituents. A move that has frequently been made by ontologists who give principles of unity for different kinds of objects is to claim that certain of these principles are incapable of yielding genuine objects. That is, things we would normally take to be objects in good standing are excluded from a rigorous ontology on the grounds that the way(s) in which their parts hold together are insufficient to produce anything truly one.

The particular dispute that will be the focus of this section is usually cast in terms of whether to count certain kinds of objects – namely non-living compound particulars like artifacts and compound physical bodies – as genuine denizens of reality. Various philosophers have been inclined to deny this. My argument will be that what the debate is really about is (or that it is *better* to understand the debate as one that concerns) whether or not the relevant kinds of objects

count as objects in the strict sense, that is, as intrinsically unified independent concrete particulars possessed of determinate identity.

I will consider the ontological perspectives of three philosophers who take distinct positions on this issue. Wiggins accepts that (a) living organisms, (b) physical simples, (c) mereological compounds, (d) artifacts and (e) natural formations all genuinely exist; Hoffman and Rosenkrantz admit (a), (b) and (c) to their ontology but discount (d) and (e); and van Inwagen, adopting a very radical stance, accepts only (a) and (b). I attempt to diagnose what is going on in this debate by showing that those who dismiss certain kinds of objects tend to do so on the grounds that such objects fail to live up to the standards expressed by the formulation of objecthood provided toward the end of the last section. This observation, I think, will yield a way of moving forward in the debate, and of taking steps toward a dialectical reconciliation of certain apparently irremediably conflicting intuitions. I will be arguing that there is something misguided about the whole dispute as currently conducted, and, although I will not be in a position to resolve the whole issue (especially not in this section), there will be lessons for it coming out of what Chapter Four will accomplish.

2.2.2 David Wiggins: Even Artifacts are Real

Wiggins' ontology is the most permissive of the three. His discussion of individuation, as it applies to living organisms and artifacts, serves as the backdrop.[54] According to Wiggins, members of both of these classes can be picked out in experience and tracked through time. They are continuants. Yet things belonging to one category need to be individuated in different ways than things belonging to the other: an organism is individuated by reference to its 'principle of activity' – which in practice amounts to a set of dispositions – that governs its behavior and enables us to say what the thing in question is. Without going into all the details, the following passage should suffice to give us the rough outline of what Wiggins has in mind by an organism's principle of activity and how we come to find out what the principle of activity is for a given kind of organism:

> Starting off with the almost pre-theoretical idea of a sortal predicate whose sense is such as to depend on the sort of thing that lies in its extension - the kind of predicate that cries out for real definition – we are led to speculate what holds together the extension. So soon as we find that, we find lawlike norms of starting to exist, existing, and ceasing to exist by reference to which questions of the identity and persistence of individual specimens falling under a definition can be arbitrated. Such norms will supervene on basic laws of nature, we have supposed; they may be understood as certain *exploitations*, so to say, of these laws. But now we are led by simple conceptual considerations to precisely the kind of account of living substances that biologists can fill out *a posteriori* by treating them as systems open to their surroundings, not in equilibrium with those surroundings, but so constituted that a delicate self-regulating balance of serially linked enzymatic degradative and synthesizing chemical reactions enables them to renew themselves on the molecular level at the expense of those surroundings, such renewal taking place under a law-determined variety of conditions in a determinate pattern of growth and development towards, and/or persistence in, one particular form.[55]

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[54] Wiggins mentions, but does not discuss in any detail, the organs of living beings as well as non-living natural formations. Both of these types of thing, he says, fall somewhere in between the categories of organisms and artifacts, but since these latter categories provide the strongest and the weakest cases, respectively, for his theory of individuation, discussion of the other categories is inessential.

[55] Wiggins (2001), 86.

When we have understood the relevant norms governing the processes of coming to be and ceasing to be, and of the maintenance, growth and development of the kind of organism under consideration, we have located the principle by which we can tell, for a given instance of that kind, when it is a member of that kind, and when it is the same instance of that kind as one picked out earlier. Of course, most of the population has to defer to the experts in the field on the specific details. Yet, that there *is* such a principle of activity to be found seems to be evident from the way we do identify members of a biological kind and track them through time.

Artifacts, on the other hand, "are individuated by reference to a parcel of matter so organized as to subserve a certain function."[56] As a result, the identity and persistence conditions for artifacts seem to be much looser than those that apply to living things. Artifacts are, for instance, capable of enduring through "discontinuous functioning, disassembly, and part replacement" in ways that organisms are not.[57] A clock may cease to tell time, be completely taken apart, left on a table for years and then reassembled, having many of its original parts replaced, and still be considered the same clock. To say all this, however, does not entail that artifact identity is purely a matter of convention or arbitrary decision, at least not according to Wiggins.[58]

Further insight into Wiggins' ontological views can be gathered from his treatment of the ship of Theseus problem. Wiggins initially lists three possible solutions: The ship identical with

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[56] Ibid, 91.
[57] Ibid, 92.
[58] "For," says Wiggins, "human purposes and decisions might enter into the invention and modification of human artefact-kinds without its following that any particular questions of identity and difference (between this artefact and that artefact) should qualify for decision by stipulation" (Ibid, 91).

Theseus' ship is either (i) the reconstituted ship; (ii) the repaired ship still in operation; or (iii) both. Strong intuitions ground both (i) and (ii), and there would seem to be a genuine disagreement between a person who held that (i) and a person who held that (ii) is the ship Theseus used. Option (iii), however, attempts to collapse the dispute by claiming that the identity conditions are relative to the interests of the disputants – the one seeking an archaeological relic, and the other a functionally persistent continuant. Rejecting each of these three attempts as unsatisfactory ((i) and (ii) because to choose either would be to fail to respect the intuition driving the other, and (iii) because it denies the legitimacy of the dispute between (i) and (ii)), Wiggins presents two further solutions.

Option (iv) is the view referred to in the literature as the "best-candidate proposal." It suggests that we should

> start with the relation in which x and y stand just in case y is a coincidence-*candidate* (of type f) for identity with x. We then say that *y veritably coincides under* f *with* x if and only if *y is an* f-*coincidence candidate for identity with x and nothing distinct from y is as good an* f-*coincidence candidate for identity with x as y is*.[59]

We would then need to spell out criteria for candidature, and decide which among the competitors comes out first, according to the relevant criteria. Whichever this turned out to be would be the ship of Theseus. The problem with this view, Wiggins says, is that it violates what he calls the *only a and b* rule:

> In notionally pursuing object a in order to ascertain its coincidence or non-coincidence with b, or in retracing the past history of b to ascertain

[59] Ibid, 95.

> its identity link with a, I ought not to need to concern myself with
> things that are other than a or other than b.[60]

Whether or not either the working ship or the reconstituted ship is the ship of Theseus, however, will depend at least partially on whether the other exists. Holding this view, then, would require us to approve of claims like "At time t1 *a* was not identical with *b*, but at later time t2 (when *c* ceased to exist) *a* became identical with *b*" which seems to run contrary to the nature of the identity relation.

Option (v), the view Wiggins ends up advocating, attempts to rule out the possibility of multiple candidates by modeling artifact identity on Helen Morris Cartwright's identity-condition for quantities, which "excludes all addition or subtraction of matter whatever."[61] To make this condition suitable for artifacts, says Wiggins, we would have, on the one hand, to strengthen it "to require some however vestigial continuance of the thing's capacity to subserve the roles or ends the artefact was designed (as that very artefact) to subserve." In another way, it would have to be weakened to allow some of the artifact's original matter to be exchanged,

> provided only, if the reader will forgive the comical precision of this
> first attempt, the artefact retains more than half of that original matter
> (or provided that it retains, where such is definable, the material of
> some individuatively paramount *nucleus*).[62]

This condition should be taken together with the point that our judgments about artifact persistence do not always "demand to be read literally as statements of identity." Here we see very clearly the kind of permissiveness Wiggins allows in matters of ontology, and it seems to be fairly reasonable. He continues, "[t]he truth is though that, for some practical purposes, we

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[60] Ibid, 96.
[61] Ibid, 100. See Helen Morris Cartwright (1970), pp. 25-42 (citation given by Wiggins).

simply do not mind very much about the difference between artefact survival and artefact replacement. (A negligence that in no way undermines the real distinction between these.)"[63] The insight that our practical purposes can play a role in determining how we regard objects of certain kinds is one that will prove important for the approach to developing the ontological framework I employ in Chapter Four. For now, what should be kept in mind is the way in which Wiggins accommodates different kinds of objects within ontology by means of fairly diverse principles. For Wiggins, living organisms are real, persisting objects *par excellence*; artifacts make the cut on significantly different grounds, yet they make the cut nonetheless. Many other ontologists are more conservative.

2.2.3 Hoffman and Rosenkrantz: Organisms and Mereological Compounds

Hoffman and Rosenkrantz, who occupy a middle position between Wiggins and van Inwagen, argue that artifacts are not genuine occupants of reality, though they admit both living organisms and mereological compounds. In their (1997) *Substance: Its Nature and Existence*, they present a number of arguments in support of the conclusion that ordinary inanimate physical objects (a class including artifacts and non-living natural formations but not mereological compounds) are unreal. Some of these arguments are conceptual and others are "scientific" or empirical.

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[62] Ibid.
[63] "When someone gives his watch to the watchmaker to clean and repair, the thing he wants back may, on a very sober and literal minded construal, be either that very watch (by the unproblematic criterion) or else a watch with a certain obvious relation to his (a watch of the same kind, in better working order, enjoying considerable community of parts, etc.). If he wants more than that, if he thinks of his watch as an antiquarian or historical relic from a better age or as a work from the hand of a great artist, then he should take more precautions than we normally do take" (Ibid, 101).

Conceptual difficulties arise for anyone wishing to defend the existence of ordinary objects. Firstly, it is impossible for a material object, *a*, to increase by addition of a part, *b*, since in the process nothing would increase – neither *a* nor *b*, which would stay the same size, nor the compound *ab*, which could not be said to increase because it only just began to exist. Furthermore, the belief in such things requires us to allow the possibility of multiple spatially coincident physical objects - a mereological compound and an artifact or natural body could simultaneously fully occupy the same place at the same time, which offends against parsimony. This belief also requires that some mysterious constituting relation – a relation of supervenience perhaps – hold between the mereological compound and the particular in question.[64]

Another seeming difficulty is that we are required either to accept the possibility of intermittent existence (which, Hoffman and Rosenkrantz argue, is absurd) or to deny this kind of existence at a price. Take the case of a clock that breaks down, is completely disassembled and then put back together using some of its original parts as well as others that were not originally part of it. Wiggins claims it is the same clock at each of these stages. Hoffman and Rosenkrantz disagree:

> This is surely wrong, for no physical substance can consist of a
> collection of disassembled, scattered, parts which no longer stand in the
> requisite unifying causal relation. Not only do the parts of the
> disassembled clock fail to exemplify this unifying causal relation, but
> these scattered parts lack the *form* of a clock, and there cannot be a
> clock that lacks this form. Furthermore, Wiggins' view implies that a
> clock exists while disassembled, *if* the clock happens to get reassembled
> in the future, but *not* otherwise. The supposition that the present

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[64] These arguments can be found at Hoffman and Rosenkrantz (1997), pp. 154-55. Note that Hoffman and Rosenkrantz differ from a mereological essentialist like Chisholm, since, to be consistent, a mereological essentialist must deny that both ordinary physical objects and organisms exist. Hoffman and Rosenkrantz think these conceptual arguments do not apply in the case of organisms, since "no organism can be a part of any other organism, so that *a** (the initial organism, before the addition of some material part) would not be a part of *a* (the organism after the addition had been made)" (156).

existence of a physical object is contingent upon future happenstance is bizarre. For an object, *o,* must have an intrinsic nature, and a nature of this sort cannot involve a relation to a future contingent event, or, in general, to any entity whose existence is not entailed by *o*'s existence.[65]

These, in outline, are the main conceptual difficulties that Hoffman and Rosenkrantz think plague anyone who claims that ordinary inanimate physical objects exist.

The "scientific" arguments Hoffman and Rosenkrantz deploy in denying the reality of artifacts turn on the view that no conventional things – things whose identity "logically depends upon the beliefs or decisions of [one or more] psychological subjects" – but only those whose identity depends on their own intrinsic nature, are real. The "internal nature" plays a key role in regulating the thing's structure and composition. On the view of Hoffman and Rosenkrantz, mereological compounds and organisms count as real by this criterion, as do physical simples, but nothing else.[66] Specifically, since neither artifacts nor typical inanimate natural formations (a ship or a snowball, a crystal or a lake) have the requisite sort of internal nature – nothing internal to them regulates the increase or replacement of their parts over time or dictates their compositional constitution – these cannot be considered, by this criterion, as real.[67]

The other reasons Hoffman and Rosenkrantz give for disbelieving in ordinary inanimate physical objects have to do with their lack of possession of a substance- or natural kind. True objects or substances, "have an essence or nature whose exemplification is logically independent

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[65] Hoffman and Rosenkrantz, 159-60.

[66] Ibid, 167. In the case of the mereological compound, its nature "metaphysically determines that it persists only as long as it retains all of its parts… [and] strictly determin[es] the extent (if any) to which it can be stretched or compressed." And each "organism, *O,* has an internal nature, or microstructural hereditary blueprint which "controls or regulates *O*'s structure and composition." This idea is developed in great detail in Hoffman and Rosenkrantz (1997).

of the existence of human beliefs or decisions."[68] They belong to natural substance-kinds which (i) are essential to what instantiates them, (ii) are proper objects of scientific inquiry and figure in natural laws,[69] and which (iii) supervene on the common "structural and compositional properties" of the things that fall under them, which are all at least to some significant degree, structurally and compositionally similar. Given these criteria for being a real, as opposed to a merely conventional, object, Hoffman and Rosenkrantz are able to conclude that "a putative compound physical substance is real only if it instantiates a natural kind." From all this, it follows that any compound physical thing which belongs to "an artifactual kind is not a real thing."[70] Since, however, the kinds denoted by 'Mereological Compound' and by 'Organism' both count as natural kinds by the above criteria, the things that instantiate them are real things.

Based on these conceptual and empirical arguments, Hoffman and Rosenkrantz conclude that only "mereological compounds and organisms are genuine substances", and that "artifacts and typical inanimate natural formations are unreal." In so doing, they disagree sharply with Wiggins. But there is an ontological position that is starker still than that of Hoffman and Rosenkrantz.

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[67] Hoffman and Rosenkrantz, 168. Note that this is not to deny, in each case, that there exist mereological compounds which would be spatially coincident with these items if the latter existed.

[68] Artifactual substance-kinds have, by definition, some artificial function or purpose which is given by and / or depends on the "belief(s) or decision(s) of some purposeful intellect(s)" (171).

[69] In the sense that "it is possible to make suitable theoretical generalizations about their behaviour." Notice the parallel between this conception and Wiggins' view that "A particular continuant x belongs to a natural kind, or is a natural thing, if and only if x has a principle of activity corresponding to the nomological basis of that or those extension-involving sortal identifications which answer truly the question 'what is x?'" (Wiggins (2001), 89).

[70] Hoffman and Rosenkrantz, 173.

2.2.4 van Inwagen: Just Organisms and Simples

Peter van Inwagen (1990) offers an argument to the effect that, strictly speaking, there are no such things as tables, chairs, and houses (or any non-living compound objects of any sort, including mereological compounds). Nevertheless, he says, it can be true to say that my books are now on the table, without this implying that there is, in the strict sense, a table, just as we might say that the sun moved behind the tree in the yard without implying anything inconsistent with the Copernican theory of the solar system.[71] van Inwagen defends the radical view that the only way some plurality of things, call them 'the xs', can compose some further thing is if the activity of the xs constitutes a life. Similarly, the only way for some x to be a proper part of some y is for y to be an organism and for x to be "caught up in the life of y."[72] Nowhere else can we find a case of something's being composed of other things or possessing proper parts. This leads to the conclusion that the only physical things that exist are living organisms and simples.[73]

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[71] van Inwagen, 102. Similarly, someone might say truly say that there is a bliger crossing the field even though a bliger is in fact six creatures giving the impression of being something like a tiger, and these creatures do not compose anything. van Inwagen writes, "Consider six animals arranged in bliger fashion; consider the region of space that they collectively occupy; there is no one thing that just exactly fills this region of space" (104). To deny that there are bligers is not like denying that there are ghosts. In the latter denial, but *not* in the former, the claim is that when people report seeing ghosts, there is nothing *there*, no "real and unified set of phenomena" corresponding to the content of the reported experiences (107).

[72] He notes that the xs may become proper parts of y through assimilation or through generation (pp. 95-6).

[73] In a way, he says, the only things that exist are organisms: "An organism may be thought of as a thing whose intrinsic nature determines how it is to change its parts with the passage of time. Thus, a table could not be an organism since, if there were tables, they could change their parts purely as the result of the application of external forces…. A simple fits this abstract characterization of what it is to be an organism: its intrinsic nature determines that it is always to be composed of the same parts. If we adopt this way of talking, we can say that all physical objects are organisms, either degenerate or living" (98). Concerning the identities of organisms, van Inwagen writes, "If an organism exists at a certain moment, then it exists whenever and wherever – and only when and only where – the event that is its life at that moment is occurring; more exactly, if the activity of the xs at t1 constitutes a life, and the activity of the ys at t2 constitutes a life, then the organism that the xs compose at t1 is the organism that the ys compose at t2 if and only if the life constituted by the activity of the xs at t1 is the life constituted by the activity of the ys at t2" (145).

Take the case of a chair sitting in a room. van Inwagen admits that (a) There are physical simples that are arranged chairwise and can be thought of as contained within the spatial boundaries of a chair-receptacle R (the region of space that would be occupied by a chair if chairs existed). In virtue of (a), when someone says "There is a valuable chair in the room," what this person says is true (or at least, for all practical purposes, as good as being true), in spite of the facts that (b) There is no chair in the room in the sense of there being any one physical object located in R, and (c) There is no single thing that is composed out of the physical simples present in R. The claim that there is a valuable chair in the room is "sufficiently empty of metaphysical commitment" that we cannot say either that it does or does not entail the falsity of (b) or (c).[74] When someone makes a chair, or any other artifact for that matter, he or she does not bring anything into existence, but merely rearranges already existing objects "and cause[s] bonding relations to begin to hold or to cease to hold… between objects."[75]

A further reason van Inwagen provides for thinking that, more specifically, no *artifacts* exist is that statements concerning their persistence actually import "covert reference[s] to the dispositions of intelligent beings to maintain certain arrangements of matter."[76] When intelligent beings are disposed to act according to certain 'rules' to preserve the arrangement of the parts of some inanimate object, that object is the subject of what van Inwagen calls a *history of maintenance*. For this reason, he says, we still think there is a watch on the table even though it has been completely disassembled, but we do not think there are any watches in the scrap pile of watch

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[74] van Inwagen, 107. Similarly, the fact that the "lunar receptacle contains untold myriads of things" does not entail that "these myriads compose a single thing" or that "when people say 'Men have walked on the moon,' they say something" false (105).
[75] Ibid, 127.
[76] Ibid, 135.

parts: "[T]he gears and springs spread out on the jeweler's table are the current objects of a history of maintenance and none of the gears and springs in the scrap bin is."[77]

According to this way of seeing things, all the facts about ordinary inanimate objects turn out to be facts about simples arranged in certain ways. We should, then, be able to paraphrase sentences that contain references to artifacts using sentences that make reference only to simples. For instance, van Inwagen offers the following paraphrase of 'Some chairs are heavier than some tables':

> There are xs that are arranged chairwise and there are ys that are arranged tablewise and the xs are heavier than the ys.[78]

In replacing the original statement's ordinary predicate "x is a table" with the variably polyadic predicate, "the xs are arranged tablewise" the paraphrase, says van Inwagen, gives us a statement that demonstrates why the original claim seemed to be saying something correct. There can also be more complex paraphrases concerning artifacts. So, "When it was built, that house over there was smaller, since it wasn't until 1952 that the garage was added" is paraphrased as "The initial objects of the history of maintenance of those things arranged housewise over there collectively occupied less space than those things over there do, since it wasn't until 1952 that the then-current objects of that history included things arranged garage-wise".[79] And "This house could have been larger" is paraphrased as "These things arranged housewise are the objects of a history of maintenance such that it could have had objects that collectively occupied more space than these things in fact do".

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[77] Ibid.

The benefit of this view, concerning the problems that artifacts generate, is that such problems disappear altogether, since there cease to be any artifacts to cause the problems in the first place. In fact, van Inwagen seems to see the helpfulness of adopting his position in dealing with these apparently recalcitrant problems as its main recommending feature.[80] We don't have to worry about which ship is the true ship of Theseus because there are no ships. Instead, the situation that gives rise to the apparent problem of persistence through mereological change can be rephrased in terms of (honorary) simples.[81] Instead of talking about ships, we can explain everything that happens in terms of planks: At first there were a number of planks arranged shipwise; then one by one the planks were removed and replaced by other planks, with each iteration yielding the same total number of planks arranged in the same overall pattern; later on the planks that had been arranged shipwise at first were again arranged shipwise. None of the planks ever becomes a proper part of anything, nor does it come to compose anything together with any of the others.[82]

I think a serious question should be raised at this point concerning the simples arranged chairwise or the simples arranged shipwise or simples in any arrangement that we normally refer to as a compound inanimate object. The simples in question are capable of existing in other arrangements, or even in no arrangement at all (e.g. randomly scattered around). So the fact of

[78] van Inwagen, 109. There are, according to van Inwagen, at least two other ways the paraphrase could work – one in terms of sets and the other in terms of regions of space.
[79] Ibid, 136.
[80] "I think that the best reasons for accepting my proposed answer to the Special Composition Question are available only to the philosopher who has examined the great philosophical puzzle cases about endurance in the light provided by this answer" (115).
[81] Of course planks aren't physical simples, but for the sake of simplicity and since their compositional status is not in question in the example, van Inwagen treats them as though they were.

the arrangement – the fact that the simples are arranged as they are – is a fact over and above the fact that these simples exist. Why is it, then, that given the arrangement of the simples – which van Inwagen describes (loosely) as requiring that the relative strength of bonding of the simples within R to one another be greater than the bonding of those simples to the (non-wood) particles outside of R and large compared with "the forces produced by casual human muscular exertions" – does not confer some unity on the simples in question? This question leads us naturally to some meta-reflections about the debate.

2.2.5 Recasting the Debate

A general pattern can be seen emerging from the various concerns raised over the existence of the offending types of objects. When what is being referred to (or mentally considered) as one thing turns out in fact to be many things, we say that that which was being referred to does not exist, or at least that it exists only in our minds but not in extra-mental reality. This is clearly what Hoffman & Rosenkrantz and van Inwagen are doing in regard to the kinds of inanimate compound physical objects whose existence they, respectively, deny.

But let us reconsider (albeit briefly) the arguments of the artifact-deniers from a different perspective. Let us transpose the debate from the key of determining whether or not certain classes of objects *exist*, to the key of determining whether certain classes of individuals *are objects*, in the sense of that word given at the end of section 1 of the present chapter. The strength of the reasons for the apparent impossibility of intermittent existence which artifacts (if they

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[82] van Inwagen, 129.

existed) would be capable of exhibiting is locatable in the fact that such existence would violate the requirement of intrinsic unity for objects. Independence also seems to be threatened if indeed human purposes or conceptual schemes play an indispensible role in determining what certain objects are – for then the identity of the object in question will depend on (make essential reference to) some human cognizer(s).[83]

Relatedly, the fact that artifacts and other inanimate objects seem to lack internal natures on which their identity could depend, and that they fail to instantiate any natural kinds appears to contravene the requirement that any object should possess a determinate identity. Hoffman & Rosenkrantz found the possibility of spatially overlapping objects like statues and lumps of bronze unparsimonious and mysterious, and so decided to eliminate the statues and retain the lumps (at least when lumps are conceived of as mereological compounds, incapable of undergoing mereological change). The intuition at work here seems to involve certain ideas about what it is to be concrete (spatio-temporally located), insofar as concrete objects generally (at least at the macro-level) seem to be impenetrable, and to dominate their spatio-temporal location. van Inwagen gets rid of the lumps as well, on the grounds that all there really are, are simples arranged lump-wise, which do not lead us into any untoward ontological difficulties.

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[83] It may seem as though the line between ontological dependence and extrinsic unity is being blurred here. But in the case currently under discussion it is the *identity* or *essence* of the artifact that is seen to depend on (the intentions and purposes of) a cognizer, which is different from the mind-dependence involved in engendering *extrinsic unity* on an otherwise disunified entity. It is not important, in the former case, that the entity on which the identity of the object depends happens to be a mind (or a being having mental states) – the same generic relation of dependence is involved here as would be involved if the dependence were on something non-mental, as in the case of a rock's property depending for its identity on the rock that possesses it; in the latter case, however, since the source of extrinsic *unity* is necessarily traced to certain mental processes, the mind-dependence involved here is one specific to minds or mental states, and hence is not equivalent to the ontological dependence relation. Put more briefly, it is unity-dependence, rather than ontological dependence that is involved in the latter case.

Again, the possibility of there being a single object in the chair receptacle R would seem to violate the intrinsic unity requirement.

It is significant that van Inwagen takes special pains to show that statements concerning objects of the sorts he deems non-existent can still turn out true (or as good as true, for all practical purposes). He does so out of a desire to appease commonsense, which reacts – as I think it *ought* to react – to his denials of the existence of any sort of inanimate compound object with indignation. But it does not seem to me that commonsense should rest satisfied with the paraphrases van Inwagen offers as consolation.

Although I am not attempting to settle specific arguments here, for the sake of clarity in what follows, I need to make a few points that will reveal the perspective I am taking on the debate as a whole. A plausible strategy for resolving the disagreement concerning the existence of artifacts is to look for a middle ground between van Inwagen's denial that there is any one thing there in the chair receptacle and Wiggins' acceptance of the completely unconventional reality of artifacts (and perhaps of other inanimate compound objects). My attempt to recast the debate in what follows dissolves the dispute by locating some such "middle way" that allows us to appreciate the element of truth in each perspective. On the one hand, the claim that artifacts don't exist just seems crazy. We deal with artifacts all the time, and we need some way of understanding them that does justice to this. On the other hand, paying attention to the way in which artifacts exist, in comparison with the way certain other things exist, allows us to understand why that claim isn't quite as crazy as it at first appeared to be.

While it does seem right to say that physical things whose existence is observer-dependent are suspicious, it does not seem right to say that the existence of many kinds of compound physical objects is (at least is *wholly*) dependent on observers and their perceptual or mental activity. The identity of artifacts, as opposed to mereological compounds, certainly seems to be determined at least *in part* by features of our conceptual scheme and / or our interests and purposes. A statue is what it is, *in part*, because we perceive it to be that way. The identity conditions of artifacts are partially conventional or "pragmatically determined," without there being any fact of the matter.[84] A mereological compound, on the other hand, is what it is regardless of how we see it. In a sense, this is what the whole question of identity through time is about. More specifically, it is what the relation between the objectivity of a thing and its identity conditions is about. The more the identity conditions of a thing (that isn't one of us) are determined by facts about us, the less objectivity the thing will have. The less dependent the identity conditions of a thing are on features of our conceptual scheme and interests, the more objectivity we should attribute to it. I think that something along these lines is what has historically led many thinkers to claim that existence or reality comes in degrees. But whatever is right about that idea can be retained in the more sober claim that not all existing particulars are objects in the sense given in 1.1.4, a judgment which does not require us to attribute more existence to any one class of entities than to another.

Artifacts, then, although they do not fully meet the requirements of being intrinsically unified, concrete independent particulars, nevertheless are singular, concrete, particular entities, and

hence their *existence* cannot be denied. They have a unity more than a merely mentally imposed unity – their parts hold together regardless of what we think about them. I find the suggestion that artifacts are nothing at all problematic for at least two reasons. First, we attribute unity – and hence existence as individuals – to them in virtue of the arrangement of the material parts in virtue of which they can be used by us to accomplish certain purposes. We attribute to them a unity and reality in virtue of the fact that they subserve certain purposes of ours. Secondly, they are physical objects – something like versions of Hoffman and Rosenkrantz's mereological compounds (but sufficiently modified to remove the problem of the notion's incoherence). Their material parts are organized and connected in such a way that, given the laws of nature governing our universe, they are capable of being used by us to do things we want to do (to push or pull around other collections of matter; to produce effects on living organisms and persons, etc.).

It seems to me that we need some kind of intermediate category to which particulars like artifacts and even lumps of clay would belong, in virtue of the unity they possess which is somewhat like that attributed to mereological compounds by Hoffman & Rosenkrantz, except without the restriction that this kind of thing is incapable of persisting through changes in parts. For one thing, even though artifacts are given their identity conditions, at least in part, by virtue of the (human) intentions and purposes they serve, there is nevertheless an objective fact of the matter about whether or not they do or can in fact serve those purposes. Because of the unity they have (ultimately spelled out in terms of physical forces and chemical bonds) they are capable of doing what we want them to do. One way of showing, then, that an artifact persists

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84 Hoffman and Rosenkrantz (1997), 165.

through change, is to show that it is still capable of being used for the purposes that gave it its identity in the first place. A hammer is the sum of its material parts, yet these parts must be of a certain sort and their arrangement must be according to certain principles. So there is a kind of blending of intrinsic and extrinsic unity in an artifact – on the one hand it has a certain sort of thin but nevertheless intrinsic unity in its existence as a physical object (a modified mereological compound); on the other it has extrinsic (mentally-imposed) unity as it is defined in terms of the functions and/or purposes it was designed to meet. The two types of unity are in this case related. If the parts of the artifact were not connected by chemical bonds and physical forces of the relevant sort, it would be unable to meet the purposes for which it was made.

The point of this discussion is that the debate which seemed to be about whether certain kinds of objects exist or not, in fact turns out to be a debate over whether certain classes of individuals are correctly included in the extension of the concept of an object as that concept was formulated in Section One. As I noted at the beginning of the present section, my aim here has not been to resolve the dispute or to make pronouncements regarding which kinds of entities really exist and which do not. Instead, I attempted to indicate a dialectical tension to whose resolution the ontological perspective developed in Chapter Four will contribute. According to that perspective, there will be a place in "ontological space" for any class of entities to which we are required to appeal by the conceptual demands of any sufficiently well-entrenched practices we engage in. What place a given class of entities will occupy will be determined by how the entities in question measure up on the various ontological dimensions that are generated by the distinctions that were discussed in 1.1. This way of looking at things will offer a kind of middle ground; on the one hand, every sufficiently respectable class of

entities will be given a place in the overarching ontological framework. On the other hand, there will be distinctions between one class of entity and another on grounds of greater and lesser ontological robustness. But I leave further development of this thought until the relevant framework has been set in place.

Chapter 3

Three Ontological Accounts of Objects

In this chapter, I review the three main approaches that contemporary ontologists have taken to the project of giving an "ontological assay" or an "account of the ontological structure" of objects or independent concrete particulars: Bundle Theory (BT), Substratum Theory (ST), and Non-Reductionist Theory (NRT).[85] Giving an ontological assay of an object differs in important respects from giving an analysis of the concept of an object. An ontological assay attempts to lay out the ultimate constituents of reality and to provide a framework in which any object or situation may be accounted for in terms of these constituents and their relations to each other. A conceptual analysis of the term 'object', on the other hand, will potentially look quite different. It will provide the necessary and sufficient conditions for membership in the class of objects without having to specify any ultimate ontological constituents. This was part of what Chapter Two accomplished. Understanding the difference between an ontological assay and a conceptual analysis will help to situate the debate that will be the subject of this chapter, and should help us to determine which tools of criticism and appraisal are appropriate for an examination of the theories at hand.

The first two approaches to providing an ontological assay, namely Bundle Theory and Substratum Theory, can be considered as *reductionist* or *constructionist* in the sense that they rest on

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[85] In using these designations, I follow Loux (2001). The titles of the first two sorts of theory are fairly standard; the third sort is variously denominated. Macdonald (2005), for instance, refers to her non-reductionist approach as a "Property-Exemplification Account of Substances." I prefer to refer to views of this kind simply as non-reductionist theories. All of this is somewhat complicated by the fact that each of the views in question is in some sense a theory of substances, since "substance" can (at least in one important sense of *that* word) be taken as a synonym for "independent concrete particular."

the assumption that objects are completely constituted by, or are built up out of, elements that are more ontologically basic. To have an object, on such accounts, *just is* to have the relevant elements, suitably conjoined. BT and ST differ, of course, in their views of what count as "the elements," the former taking these to be exhausted by properties and the latter insisting on including a non-property ingredient. The third approach is, by contrast, *non-reductionist,* in the sense that it takes "substance kinds" or fundamental sortal terms to be unanalysable, primitive universals, and identifies objects as instances or exemplifications of these "irreducibly basic" kinds. On a non-reductionist view, no ontological elements *compose* objects; the complete objects themselves – the instances of the relevant kinds – *are* the ontological elements. The distinction being marked off here is one that holds between types of ontological assays, and the use of the word "reductionist" here is not the same as its use in, say, theories that reduce chemistry to physics. In the latter case, but not in the former, the possibility of emergent properties is ruled out. But nothing about the weaker variety of ontological reductionism, which reduces objects to their properties (and substrata), requires that properties at one level could not emerge unpredictably from the properties and parts of the object at some lower level.[86]

In my examination of BT and then of ST, I begin by noting some of the standard problems for the view, followed by a presentation of what I take to be the most compelling version(s) of each theory. I then show that even the best versions on offer remain seriously problematic. Following this, I move on to a critical examination of the non-reductionist position. It is here that I hope to make a more substantial contribution to the field, as this position does not seem

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[86] On BT, for instance, although objects are nothing over and above their properties, it is still possible that properties at one level could "supervene" on the lower level. Nevertheless, unlike NRT, on reductionist views there

to have yet been given a serious critique in the literature – though aspects of it have been discussed in a few places. My conclusion will be that *Non-Reductionist Theory* (NRT), at least as it stands, also faces some fairly devastating difficulties. Taking this result together with the critiques of the other two positions, it will appear that we are forced to say that none of the three accounts of the nature of objects given so far provides an unqualifiedly satisfactory account of their ontological structure. But this conclusion, I argue, should lead us to wonder whether the real problem is the more endemic one of attempting to provide a single, general assay that applies to all ontologically significant individuals. If we abandon this approach, as I will argue we ought to do in Chapter Four, we begin to see how different ontological assays can be given for different types of individuals, depending on what features are included in the concepts under which individuals of a given type fall.

3.1 Bundle Theory

Every philosopher has heard of the theory that objects are nothing more than bundles of properties. The key advantage of this theory is that it offers a streamlined one-category ontology which does not require appeal to featureless substrata. Most will also be aware that the Bundle Theory has some serious problems. For instance, it seems unable to account for the numerical difference of qualitatively identical objects. What people might not be aware of is that there are some fairly sophisticated versions of BT that avoid most, if not all, of the standard objections. In what follows, I distinguish cruder versions of BT from some more sophisticated ones, and note

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is nothing more to what an object is than the totality of the properties that compose it. Thanks to Doreen Fraser for pointing out this potential ambiguity.

remaining objections to the latter, borrowing from van Cleve's (1985) treatment.[87] I then explicate the most notable version of BT, which is due to Peter Simons – the *Nuclear Trope Bundle Theory* – according to which objects consist of a core of essential tropes along with a periphery of accidental tropes. I explain why Simon's theory is powerful and appealing – especially if we clarify the distinction, which he employs, between substantial and qualitative parts, and the idea that objects have simple parts. But in the end I argue that there are still good reasons for rejecting it.

3.1.1 van Cleve: Crude, Sophisticated, and Super-Sophisticated Versions

James van Cleve distinguishes three versions of the Bundle Theory, two of which – the "Crude" or "Naïve" view, and the "Sophisticated" view – are seriously problematic, while the third avoids the relevant problems, but only at the cost of certain hard-to-swallow implications. The crude version claims simply that "a thing (an individual, concrete particular) is nothing but a bundle of properties," where the 'bundle' may be seen either as a set containing properties as members, or as a whole with properties as parts, but no requirements are placed on which properties count as one bundle. This version carries six objectionable entailments.[88] I present them here, in slightly abridged form:

If Bundle Theory is true, then

      (a)   Any set of properties qualifies as a thing.

      (b)   Things are eternal, necessary beings.

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[87] In *Philosophical Studies*, 47, pp. 95-107. Reprinted in Loux (2001), pp. 121-133.
[88] These are given, in more detail than I give them, on van Cleve, pp. 121-22.

(c) Any member of a set is exemplified by that set.[89]

(d) No thing can change its properties.

(e) No thing could have had properties other than those it actually has.

(f) No two things could have the same properties.

Statement (a) follows fairly directly from the statement of (crude) Bundle Theory; (b) follows given the additional facts that properties, seen as universals, exist necessarily and sets exist necessarily if their members exist; (c) follows from the fact that exemplification would be equivalent to membership, on such a view. Statements (d), (e), and (f) are entailed by the fairly standard assumptions that sets have essentially all and only the members they have and that no two sets can have all the same members.[90] The problem for crude BT is that there are obvious counterexamples to all of these entailed claims.

More sophisticated versions of the Bundle Theory reflect the fact that not just any properties can make a bundle, but only those relevantly related. The relation responsible for binding properties into bundles is a contingent, homogeneous relation that has been given various names: 'compresence', 'colocation', 'togetherness', 'consubstantiation', 'co-instantiation', etc. Conceiving of things as bundles of this sort enables one to avoid entailments (a)-(c), but not to escape from (d)-(f). Bundles of co-instantiated properties are still incapable of changing, since elements F and G being first co-instantiated with H and later with K yields a new bundle, not an

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[89] Absurdly, since redness is a member of {redness, roundness}, that set would be red (would exemplify redness) (ibid, 122).
[90] van Cleve mentions that parallel arguments can be applied to bundles conceived as wholes with tropes as parts, but does not actually offer these arguments. I think he is right about this, though I do not have room to say why in detail here.

alteration in an already existing one.[91] Similarly, no bundle composed of F, G, and H could have

existed with F, G, and K instead, so objection (e) still applies.

Entailments (d) and (e) might be avoided, notes van Cleve, if an individual thing is identified

with a core of essential properties but allowed to have an 'outer fringe' of exchangeable,

accidental properties. But, he argues, it would be strange to consider a sub-bundle such as

{animality, rationality} as an individual thing in its own right. And furthermore, if the individual

is not seen as the complete bundle of properties, the same core would be capable of occurring

together with a variety of outer fringes containing mutually incompatible accidental properties.

This would force us to be willing to say that the same individual could be, for instance, both

wise and foolish at the same time and in the same respect.[92] And even with the addition of the

core/fringe structure, the sophisticated version still generates the sixth entailment, since

complexes whose constituents are exhausted by properties can only differ if their properties

differ.

The only remaining way for the Bundle Theorist to avoid the problems raised by (d), (e), and

(f), van Cleve thinks, is to adopt a 'new' form of the theory. Unlike the 'old' bundle theory,

which identifies every individual with some complex of properties, the new bundle theory denies

any such identification, but is willing to paraphrase or translate statements that appear to make

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[91] Ibid, 124. Again, both this claim and the one immediately after it follow from the fact that any set necessarily has all and only the members it has.

[92] Note that the weight of this objection depends on taking properties as universals, not as tropes. van Cleve mentions, and swiftly dismisses, the attempt to identify things with bundles of world-indexed properties (WIPs) as a way of freeing Bundle Theory from the consequence that an object has all its properties essentially. As the idea of world-indexed properties seems to me to be of doubtful coherence, I leave it up to the interested reader to explore the details of this branch of the dialectic (see van Cleve, pp. 125-26).

reference to individuals into statements that refer only to properties.[93] Strictly speaking, on this

theory there would be no individuals – only properties – so no worries could arise about

individuals that cannot change or that could have possessed different properties than the ones

they possess. Furthermore, the apparent problem of two indiscernible individuals dissolves into

the (unproblematic) case of a single set of properties being instantiated twice, at different

places.[94]

How ought we to understand and express such a view? According to van Cleve,

> [w]hat the new bundle theory amounts to is a purely Platonic ontology
> in which properties are the only ultimate logical subjects. An
> appropriate language for this ontology would consist simply of names
> of properties plus a sign for instantiation, say an exclamation mark.
> Instead of '$\exists x(Fx)$', which suggests that there is some *thing* that
> instantiates F, we could have '$!(F)$' (F is instantiated); instead of '$\exists x (Fx$
> $\& Gx)$' we could have '$! (FG)$' (F is co-instantiated with G), and instead
> of '$\exists x \exists y (Fx \& Fy \& \sim (x=y))$' we could have '$!!(F)$' ($F$ is instantiated at
> least twice). This notation highlights the fact that although properties
> are instantiated, they are not instantiated by anything – not even by
> bundles of properties.[95]

While this view appears to be coherent, and seems to avoid the unsavoury entailments (a)-(f), it

can be held only at the cost of a commitment to Platonism, to a mysterious, primitive notion of

instantiation, and to the denial of the existence of ordinary individuals.[96] Given the fact, then,

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[93] Ibid, 128. To illustrate his idea, van Cleve draws a parallel between these two views and the old and new versions of phenomenalism. Whereas the old phenomenalism *identified* material things with certain groups of sense data, the new version denied the existence of material things on the grounds that only sense data exist, and none of these taken singly or together are material things, so that "there is nothing to which its predicate, 'is a material thing', truly applies."

[94] Of course, this solution – into which van Cleve thinks the new bundle theorist is forced – might not be so palatable, since it would require taking places as individuals (see Ibid, n. 30, p.133).

[95] Ibid, 128-29. It may be wondered whether, and if so, in what sense, the verb 'instantiate' is appropriate here.

[96] As if this were not enough, van Cleve points out a further deterrent to accepting the 'new' bundle theory. For any philosopher holding this theory, "since properties would be the building blocks of his universe, and since he would not be identical with any property or any complex of them, he would have to believe that there is nothing with

that both the old and the new bundle theories require denial of what seems to be obvious, the remaining alternative, says van Cleve, is to return to the idea of substance, taking an individual to be "something over and above its properties, something that *has* properties without being constituted by them." I will not follow up van Cleve's lead here, though I will consider the possibility in section 3.3 on Non-Reductionist Theory.[97]

Where van Cleve drops the ball is in his treatment of another possible way out for the bundle theorist. A straightforward way for a bundle theorist to answer the objections arising from (d), (e) and (f) would be to take objects as bundles of *tropes* rather than universals. A trope is a particularized property. The solidity of this table, for instance, rather than being a participation in the universal Solidity, is a particular solidity, one belonging to *this table* and to none other. This solidity here and now cannot be instantiated by any other object. Some who include tropes in their ontologies refer to them as particular 'ways of being' or individual natures. Seeing objects as bundles of tropes is, I think, the first step toward a better bundle theory. Combined with the view that objects have cores of essential properties as well as outer fringes of accidental ones, this view would make it possible to explain how an object can change its (accidental) properties, how it could have had different (accidental) properties from the ones it has, and how two indiscernible objects could nevertheless be distinct (since, their resembling tropes being numerically distinct existences, the objects would only be exactly qualitatively similar and not numerically identical). Such a view would be able to accomplish all this without having to worry

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which he is identical – or in other words, that there is no such thing as himself" (Ibid, 130). The new bundle theorist would be committed to his own non-existence.

[97] Note, however, that van Cleve, along with Martin (1981) and Sellars (1963) and Chisholm (1976), denies that the claim that an individual is something that has properties leads to postulation of bare particulars or featureless substrata (see van Cleve (2001), note 34).

about the problem of multiply occurring cores possessing contrary properties, since the essential (trope) properties of any bundle would not be literally shared by any other bundle.

van Cleve does not take this route because he thinks tropes are just particulars and so cannot be properties.[98] But van Cleve's distinction between properties and particulars begs the question in regard to the status of properties. This is evident in light of the discussion of Chapter Two and of the neutral ontological perspective I advocated there. There is nothing about particularity that entails anything about being a property if particularity is seen as conceptually correlated with universality, and properties are seen as conceptually correlated with objects. As long as we can maintain the distinction between a property and an *object* (and we can do so precisely by seeing properties as dependent and objects as independent in the sense discussed in Chapter Two) there is no difficulty with taking properties to be spatio-temporally located particulars. And furthermore, as we shall see a couple sections down the road from here, even if some tropes turn out to be fairly object-like, this may not be as big a problem as van Cleve thinks it is.

3.1.2 More Sophisticated Still: Nuclear Trope Bundle Theory

The *Trope* Bundle Theory of objects has its roots in Berkeley and Hume, and in the writings of more contemporary thinkers like Stout, Williams, Campbell, and others.[99] But it is Peter Simons who presents a version of BT that both takes properties as tropes and makes the core / fringe distinction we've been discussing. On Simons' view, an object consists of an "individual essence" – a core (or "nucleus") of co-dependent tropes that is in need of completion by a

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[98] Ibid, 127.

"peripheral halo" of accidental tropes none of which is individually necessary for the nucleus, though some trope from the same family as the one possessed is required. The nucleus of essential tropes takes over the individuating and unifying functions traditionally performed by the substratum, according to versions of ST. Appeal to the periphery of accidental tropes allows us to maintain the intuitive distinction between essential and accidental features of an object.

I think Simons' view is the best thought-out version of BT on offer so far. The following is a summary of some of the important and distinctive features of Simons' view:

(1) Tropes are bound together not by collocation, comprescence, or co-instantiation, but by various forms of 'existential dependence' which express natural but not logical necessities.[100] Simons thus gives a more sophisticated rendering of the diverse kinds of 'bundling' relations there can be between tropes, and this enables him to avoid some of the problems that arise when comprescence is seen as a single relation uniting any and all tropes.

(2) Tropes are taken as sparse, not abundant, properties. "Not every linguistic predicate corresponds to a trope kind… and many predications will be made true… by more complex arrangements involving tropes in relation or a whole range of different kinds."[101] This avoids, among other things, population explosion objections.

(3) Although the *ultimate* (or basic) parts of objects are tropes, objects can have smaller objects (sub-bundles of either yet smaller objects or of tropes) as parts.[102]

(4) It is an empirical question whether or not the ways a macro-object is are determined by the ways their ultimate parts are – holistic quality tropes that depend on larger wholes and tropes that emerge unpredictably from lower-level properties can both be accommodated.[103]

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[99] Incidentally, it was in Williams' "The Elements of Being" that the term 'trope', in the relevant usage, was coined.
[100] Simons (1999), 30-1. These relations can be mutual and rigid (as between tropes in the nucleus), one-sided and rigid (as between accidental tropes and the nucleus) or one-sided and generic (as between the nucleus and the accidental tropes). For further discussion of independence see Simons' (1987) *Parts: A Study in Ontology*, chapter 8, and pp. 562-3 of his (1994) "Particulars in Particular Clothing."
[101] Simons (1999), 31.
[102] Such parts will appear in what follows as substantial parts. In Husserlian terms, they are independent parts.

Simons' view captures many of the intuitions that have given impetus to theorizing about objects – intuitions about identity, independence, persistence, unity and integrity – without requiring the notion of substance to be an unanalysable primitive. A further benefit of the nuclear trope theory, Simons says, is that its reductionist approach is more consistent with established natural science than views that take substance as basic.[104] And, finally, the nuclear theory is flexible – there may be nuclei without peripheries and even peripheries without nuclei – enabling the view to adapt to cover many cases of relatively deviant objects.

An objection to Simons' view raised by Hoffman and Rosenkrantz is that it seems to allow objects to have contradictory tropes – for instance, an atom would be both negatively and positively charged as a result of the presence in it of a positive charge trope (included in the proton bundle) and a negative charge trope (in the electron bundle).[105] Simons meets this attack by distinguishing between the immediate trope parts and the substantial parts of an object, so

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[103] Ibid.

[104] Ibid, 34. Views of the latter sort are incapable, for example, of covering cases of objects on the quantum level, where reidentifiable and countable substances seem to drop out of the picture. Simons points out some ways in which conceiving of what we ordinarily take to be substances is problematic. In general, there will be some indeterminacy as to what the parts of an inorganic object are. The sun, for instance, lacking anything like a skin, contains at any moment portions of matter and energy of which it will not be clear whether they should be considered parts of the sun. So, at any moment, it will not be entirely determinate which object (which whole) is the sun. I suppose that at a sufficiently low level the same thing would be true even of things like rocks – at the boundaries of a rock, there will presumably be some exchange of particles with the surrounding environment.

The point about indeterminate boundaries, Simons thinks, can be extended to organisms as well, due to their "continual energy and matter exchange with the environment." Furthermore, it is not always clear on which side of the line between individuals and collectives certain creatures, fall. About these, Simons says, "It seems somehow artificial to force the question 'one individual or many?' on them: they are organised at different levels in different ways (and falling under different sortal terms) and there may be no distinguished level dictating the boundaries of 'the' biological individual." In addition to this, there are problems about delimiting kinds of organisms – standard methods of dividing sexually reproducing organisms into biological species may not apply in the case of organisms that reproduce asexually, for example. But until this is settled, we cannot know how to individuate members of the latter kinds either. In addition to these examples, Simons views our idea of self or person as highly problematic. Taken together with his point about the failure of the concept of substance at the level of fundamental physical reality, Simons' conclusion is that, "substance, far from being a widely applicable commonplace, is a concept rarely if ever fulfilled, an idealized limit of little or no use to metaphysics."

Simons does admit that although the trope bundle theory is better suited for describing what takes place in quantum mechanics, it too may ultimately be inappropriate (35).

that the negative and the positive charge tropes belong not to the atom itself but to its substantial parts (the electron and the proton, respectively).[106]

Simons' response employs a distinction between trope parts (whether immediate or not) and substantial parts. This distinction is important as it allows us to distinguish between two kinds of constitution. On the one hand, a material object is constituted by its physical or substantial parts – as we say that a chair is made up of its back, its legs, its seat, its arms, etc. (From the perspective of BT, each of these will be a sub-trope-bundle.) But there is another sense in which an object is constituted by its *properties*. By specifying the properties of the chair with sufficient precision and thoroughness – its mass, size, shape, colour, texture, type, etc. – you will presumably have exhausted all that there is in the chair. So the distinction between substantial and trope parts has some teeth. But Simons does not take much effort to spell out precisely what this distinction amounts to.[107] Furthermore, his account raises, but does not answer, the question of how substantial and qualitative parts are related. Finally, his account of trope bundles nested within trope bundles must either end in simple parts or admit an infinite regress of nested bundles. But Simons does not take an explicit stand concerning whether or not there is an ultimate 'ontological ground-floor'. On these counts, then, his view remains incomplete. In a recent (2005) paper, "Qualitative Unity and the Bundle Theory," David Robb deals with these

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[105] This charge is raised by Hoffman & Rosenkrantz (1994, pp. 77ff).

[106] Simons (1999), 32. Note that in (1994) Simons seems to reject the idea that tropes are parts (p. 563) – he also denies (p. 564-5) that all tropes are *ways of being* – they are entities but not thing-like (though at the microscopic level the substance / trope distinction may break down somewhat).

[107] Nor is he entirely clear about whether, and if so, in what sense, tropes are properly seen as *parts* of objects. In (1999), p. 32 he seems to affirm quite clearly that tropes are parts of a certain kind, while in (1994), he cautions against seeing tropes in this way, though he does note even there that "[i]t is prudent not to be too dogmatic about the gulf in between substances and tropes," particularly at the microscopic scale (p. 565).

issues. I think that if we fill in the gaps left by Simons in the nuclear theory with some of the insights from Robb's paper, we get a resulting view that is both complete and very compelling.

3.1.3 Supplementing the Nuclear Theory

On Robb's version of BT, tropes are ontologically basic in the sense that while everything else ultimately reduces to tropes, tropes themselves do not have items from other categories as parts, though they can have other tropes as parts. The claim, which Robb makes more unequivocally than Simons does, that tropes are parts of objects, may seem to commit a category mistake. Clearly the redness of an apple is not a part of the apple in the same sense as its skin, or one of its seeds, or a portion of its flesh are parts of it. Furthermore, it seems that parts of objects are independent (of each other and of the whole object) while properties are not. Again, objects come into being by arrangement of pre-existing parts, but not of properties. And parts can be added to an object without having to destroy other parts, but this does not usually hold in the case of properties.

All this shows, says Robb, is that properties are not *substantial* parts. In the more general conception of parthood that he proposes, however, properties (which he calls "qualitative parts")[108] *are* included:

> (P)   B is a part of A iff there are Cs such that (i) A is [nothing over
>   and above] the Cs related in certain ways, and (ii) B is one of
>   the Cs.

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[108] The following principle is given at Robb (2005), 471. Williams (1953) calls such parts "fine parts or abstract components" of objects; Paul (2002) calls them "logical parts."

If tropes are *parts* of objects, however, there must be an explanation of how they are unified – that is, of what makes them parts of one and the same object. Key to Robb's analysis is the claim that all the genuine properties of substantially complex objects (objects with more than one substantial part) are *structural* properties.[109] Structural properties are complex properties composed of the properties of and relations among an object's substantial parts. In other words, they are 'structured on' the object's substantial parts. Since the colour of a tennis ball is composed of the colours of its left and right halves, together with any relevant relations between them, we can say that the ball's colour is 'structured on' the two halves.[110]

The principle of qualitative unity for substantially complex objects, then, is as follows:

> (CU)   For any substantially complex object O and properties F and
>   G, F and G are parts of O iff F and G are both structured on
>   the (exhaustive) substantial parts of O at some mereological
>   level.[111]

Accordingly, what makes, say, the colour and the mass of my desk properties of the same desk is that they are both composed of the properties belonging to the same set of substantial parts – the ones that make up the desk – the legs, the top, and the drawers. According to Robb's (CU), qualitative and substantial unity are clearly related, since the former is defined in terms of the latter. Furthermore, (CU) explains why qualitative parts are not independent of substantial parts

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[109] Robb denies that either higher-level properties (properties that are not structured on but merely supervene on an object's parts) or modal properties are genuine properties. Belief in higher-level properties, he argues, rests on a confusion of resemblance with numerical identity: "It is only speaking loosely that we say that Alpha [a tennis ball] has literally the same color-property throughout these changes [gain or loss of particles]" (481). And *modal* properties, he says, fail all of the usual tests for being a way of being, a genuine property. The non-modal properties of the object are sufficient for explaining its causal powers, for providing truthmakers for modal predications, and for explaining resemblance of any two objects. Furthermore, "we are not acquainted with modal properties in conscious experience" (483-484).

[110] Robb points out that it is unproblematic "that Alpha's color is also structured on (some of) the smaller particles composing Alpha" which occur at a lower mereological level (Robb, 477).

[111] Robb, 477. This does not entail that F and G have to be structured on the *same* substantial parts of O.

– because they are structured on them. They do not result, by being assembled, in the existence of an object "because their presence depends on the (logically) prior assembly of substantial parts,"[112] and they are not additive because at a sufficiently low merelogical level we can simply see that the micro-properties required for being red or being round (for example) are incompatible with those required for being green or being square.

The qualitative parts of an object are structured on the object's substantial parts, which are sub-bundles of qualitative parts. But surely, we should now say, the substantial parts of objects cannot be reduced to bundles of properties which in turn are explained as being structured on lower-level substantial parts *ad infinitum*. Where does the analysis end? Robb thinks the fact that there are objects at all entails that there must be simple objects, since the 'ontological buck' cannot be passed on indefinitely to sub-bundles of properties at ever-lower mereological levels.[113] But what can be said about these simple objects that lie at the ontological ground-floor? Since substantially *simple* objects[114] have no structural properties, they need a different principle of unity from the one given for substantially complex objects. Robb proposes the following: "the principle of qualitative unity for a simple object is identity. A simple object, that is, just is a single, simple property."[115] Ultimately, then, Robb's account requires that the ontological structure of an object bottoms out in simple tropes – simple particular natures. At the ultimate level of reduction, to be a substantial part just is to be a qualitative part, that is, a particular nature.

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[112] Ibid.

[113] He seeks, in this way, to answer Armstrong's (1978a, p. 100) objection: "It is clear that many properties of particulars involve essential reference to proper parts of these particulars. If a thing is to be a chess-board, for instance, it must have spatial parts of a certain nature related in a certain way. These parts, however, are particulars. It appears, then, that many of the properties which figure in the bundle involve the notion of further particulars. Yet the notion of a particular is the one to be analysed" (quoted at Robb, 485).

3.1.4 Problems with the Supplemented Nuclear Theory

On the view I am canvassing as the most complete and coherent version of the bundle theory, then, a complex object is a multi-leveled collection of tropes, with the highest level representing the tropes that characterize the object as a whole and are structured on the object's macro-level substantial parts. In the usual case, some of these tropes will be essential to the object, and these will form the object's nucleus; others will be only accidental, and these will form the object's periphery. The substantial parts on which any of the tropes characterizing the whole object are structured are themselves sub-bundles of tropes which may contain their own nuclei and peripheries. This view enables us to avoid most, if not all, of the standard objections to BT. What I've been claiming so far is that this view needs to be taken seriously. But should we adopt it as our best general ontological account of objects?

I think there are still some problems facing the supplemented nuclear trope bundle theory. Even if tropes are admitted to one's ontology (again, for neutrality's sake I will not rule them out), and even if it is agreed that (at least some) objects have essential tropes – tropes such that the object could not exist without them – the theory remains a troubled one.[116] An initial objection addressed by Robb is that his view seems to commit a category mistake. If it does, says Robb, this is no more a problem for his account than for any other bundle theory, since every

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[114] An example of which will be given soon.

[115] Robb, 486.

[116] A further objection I will mention but not develop in detail is that if simple objects are, as Robb says they are, identical with simple properties, we might wonder how the charge that they are unextended, like mathematical points, will be averted. But if it isn't, the nuclear theorist will owe us an account of how unextended things could ever compose or "add up" to an extended thing. This "Leibnizian" objection was pointed out to me by Shannon Dea.

bundle theory holds that tropes exhaust the contents of reality.[117] Identifying simple objects as properties does entail that some properties (namely, the basic ones) have features of substantial parts – the features of being independent, arranged, and additive. But the claim that simple objects are in fact properties is not equivalent to the converse claim that simple *properties* are in fact *objects*, since the former reduces objects of a certain kind to (ontologically prior) particularized natures, and this does not entail that simple particularized natures have all the substantial features characteristic of objects. In particular, it does not entail that simple particularized natures are structured on anything at any lower level or have anything like a substratum or non-property ingredient that grounds the nature in existence.

This is Robb's explanation of the way things stand, at least. It is not entirely clear to me, however, that we can conceive of basic tropes as independent, arranged, and additive without building in something like the idea of a substratum. For instance, let's say that what we refer to as the 'spin' of a given subatomic particle turns out to be a basic trope. *Prima facie*, it seems fine to say that there is just a simple particular nature there, call it (an instance of) spin-ness. In virtue of being a basic trope, it will be simple as well as being (as a matter of primitive ontological fact) individuated and numerically distinct. But if we say that it has the *features* of simplicity and individuatedness (not to mention independence, arrangeability and additivity) in addition to its 'spin'-ness, it seems as though we have to say that even the basic tropes are necessarily complex in nature. But if so, then we need something still more basic to ground the attribution of the multiplicity of attributes to a single subject, and an infinite regress seems imminent.

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[117] He thinks whatever conceptual revisions need to be made are justifiable in light of the empirical evidence that at

There are two possible ways to avoid this result. One could (a) say that what we find at the ontological groundfloor is in fact just the particular 'spin'-ness, and that the other attributions we've been making do not correspond to genuine features of the entity we're describing; or (b) claim that the truly basic tropes are in fact bare particulars. But if the first strategy is adopted, an account will be owing of what it is that makes true the statements that attribute the purportedly illusory features to the trope under consideration, and it is unclear what this could be. Presumably there must be something about the trope that grounds such veridical predications. If, instead, we adopt the second strategy, admitting that whenever we have some nature distinct from simplicity or brute individuatedness we are in need of some truly bare, non-qualitative individuator to go with it, then we no longer have a version of BT but a version of Substratum Theory instead (a view that is not unproblematic itself – see the following section). So Nuclear Trope Theory seems to collapse into mystery or into the Substratum Theory when pressed hard enough.

An additional objection is one I will call the objection from the *indefiniteness of substantial parts*. In short, there seems to be no precise and non-arbitrary way of deciding which parts of an object count as its substantial parts and which do not. This, I think, should lead us to doubt whether there is a fact of the matter about what the substantial parts of an object are. There are a couple of ways of dividing objects into substantial parts. First, objects can be divided based on the geometrical properties of the space they occupy. On this basis, we can talk about the right and left halves of an object, say a bronze sphere or a tennis ball. In addition to the fact that where the lines are drawn is entirely arbitrary, the effect of this mode of division is that there are

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the sub-atomic level, it is not always perspicuous to conceive of entities as objects (487).

literally an infinity of distinct potential substantial parts within the object, each of which is an object in its own right. And these objects are capable of overlapping each other in an infinite number of ways, so that if some sub-region of the space occupied by the object is specified, an infinite number of parts of objects can occupy precisely the same region of space, which is a fairly counterintuitive result.

The second way of dividing an object into its substantial parts is to specify its physical parts. This can be done at various levels. A living human body for instance, may be said to have various organs as parts. But of course there will be parts which are not organs, such as individual red blood cells. At a lower level we might attempt to say that the parts of the body are its cells. However, there are at any time a number of dead cells which are not clearly part of the body. A similar thing happens at the atomic level, since at the organism's surface there is a constant exchange of atoms with the external environment. In general, any entity that is specified as a physical part will be such that its boundaries are not well-defined or precise. It seems, then, that we cannot specify the physical parts of the body with exact precision.[118]

But this causes problems for Robb's principle of qualitative unity for substantially complex objects (CU) since the effectiveness of that principle depends on our being able to specify substantial parts. Recall the principle:

> (CU)   For any substantially complex object O and properties F and
>   G, F and G are parts of O iff F and G are both structured on
>   the (exhaustive) substantial parts of O at some mereological
>   level.

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[118] Spinoza's bloodworm example, in *Ep. 32 to Oldenburg*, seems to bring out a very similar point.

If the boundaries of substantial parts are vague, it will be unclear what, precisely, the qualitative parts of an object are structured on.[119] Take the surface area of the bronze sphere, for example. If the substantial parts of the sphere are infinitely many, clearly there will be no straightforward function from the surface area of the parts of the sphere to the area of the whole sphere. Or take the mass of a living human body – if it is unclear whether some items should be counted as parts of the body (dead cells, the bacteria living in the intestines, or the water molecules in a blister on the foot) it will be unclear how to build the mass of the whole body out of the masses of its substantial parts. But if we don't know what the qualitative parts are structured on (and if, more strongly, there is no principled way of *determining* this) then we cannot use (CU) to tell us when two given properties are parts of one and the same object. And unless we can find some other principle of unity for qualitative parts, we will not be able to say, in general, when a given property is part of an object. But if sense cannot be given to the notion that tropes are parts of objects, then the very essence of the Bundle Theory seems to be in question.

Someone wanting to retain the nuclear trope theory might protest that the problems I have raised apply only to the additions I have made to Simons' view, and so only to what I am calling the Supplemented Nuclear Trope Theory, and not to the original view. But until we have an account from Simons of what happens at the ontological ground floor, one must suspect that the only reason Simons' view does not fall prey to the objection concerning the incoherence of simple tropes is that he does not explicitly work this out. And as for the objection from indefiniteness of substantial parts, the original view could only escape if it could be shown that it is not committed to (CU). But even though he is not entirely explicit about it, Simons is in fact

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[119] Furthermore, are the qualitative parts structured on the nuclei of the sub-trope bundles that are the object's substantial parts or on the entirety of those bundles?

so committed. In the response he gave to Hoffman and Rosenkrantz's objection about contradictory tropes, discussed earlier, he makes it clear that he is committed to an object's possessing smaller objects (sub-trope bundles) as parts. But if so, then he is also committed to the view that macro-level properties are structured on the properties of and relations among an object's substantial parts. But that is all it takes to be committed to (CU).

3.1.5 Conclusion

Although BT can be a lot more subtle and interesting than it may have seemed, even its best formulation is still subject to difficulties. But why does this matter? The importance of the critique of BT can best be appreciated when seen as part of a bigger story, according to which we have no coherent ontological assay of what an object is. The two other contenders for the correct ontological assay of objecthood – *Substratum Theory* and *Non-Reductionist Substance Theory* – are at least equally problematic. But this is worrisome given the pervasive conceptual demand for objects imposed by many of our explanatory practices, both in science and in everyday life. The problem may arise from our mistaken assumption that we have a single, univocal concept of objecthood which needs a unique corresponding ontological assay. If, instead, we think in terms of a *plurality* of concepts of individuals, each determined by the requirements of specific scientific or other explanatory practices, we can be more flexible in offering assays suited to the distinct types of individuals picked out. So, for instance, although BT may be inappropriate for physical objects (in view of the objections raised earlier), it may provide a completely adequate assay of mathematical objects. But further development of this larger story must be saved until the end of the present chapter.

3.2 Substratum Theory

In light of the difficulties faced by BT, the *substratum* or *bare particular* theorist argues that there has to be more to an object than mere properties – there is also something that has (is the subject of) the properties but is not itself "had" by anything else – the substratum or 'bare particular'.[120] A first stab at establishing Substratum Theory would be by demonstrating the inadequacies of Bundle Theory, in all its variants. Since the only alternative to BT is irreparably flawed, this approach goes, we get ST by default. So, for instance, it has been argued that since Trope Bundle Theory cannot account for the sameness of qualitatively identical items, while Bundle Theory with Universals cannot account for their numerical difference, there must be, in objects, some non-property constituent (the substratum) that grounds their difference, which is combined with the universal properties that ground their sameness. But the disjunctive syllogism (BT ∨ ST; ¬BT; ∴ ST) will be insufficient on its own if BT and ST are not the only conceivable ways of giving an ontological assay of objects. And since the section following the present one will discuss a third competitor in the running, it should go without saying that I find this approach problematic.[121]

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[120] Although some attempt has been made to give a deflationary account of substrata, I will focus on what Robinson calls the substantive account of substrata and their role in characterizing the nature of an IICP. There are also notably distinct variations of the substantive view. Armstrong, for instance, distinguishes between the substratum taken in abstraction from its properties – what he calls the 'thin particular' – and the substratum taken together with its properties – the 'thick particular'. Either of these two conceptions can be seen as distinct from both the Lockean substratum and also from Aristotelian prime matter, which is also sometimes seen as a kind of substratum.

[121] This will work, however, if one is limited only to what are called 'constituent ontologies' that is, ontologies that allow properties as literal constituents of objects and permit a "categorial analysis that delineates their constituents" (See Moreland (1998), p. 253). However, I see no reason to adhere to such restrictions, and the view to be discussed in the next section operates outside of them, and indeed criticizes them. For Moreland's critique of non-constituent

Traditional empiricists have generally had a distaste for the notion of a bare particular since such things seem incapable of being objects of acquaintance. A charge that is less dependent on antecedent philosophical commitments is that the very notion is incoherent or self-contradictory – those who propose it end up having to say, for example, that the things that (by definition) possess properties do not possess any properties, since they are bare. And since there are ways of explaining the three main roles for which they were introduced (uniting the properties; individualizing them; and making the bundle something substantial) without appealing to substrata, they seem to be unnecessary postulates.

Proponents of ST have, however, claimed for their view a number of advantages over any version of BT. Substrata traditionally have been seen as the key to philosophical explanations of individuation, identity, differentiation, persistence through change, etc. The usual reply from the bundle theorist is that these are not explanations but assumptions of a solution – advantages of theft over honest toil. In this section, I will discuss the major objections to ST by way of an examination of two of the best thought-out versions of the theory – J.P. Moreland's and C.B. Martin's – which approach substrata from somewhat different angles. For Moreland, bare particulars are first and foremost individuators – they are introduced as a way of solving the problem of individuation. Martin is concerned with whatever it is that grounds properties in existence, seeing that properties are ontologically dependent entities, in such a way as to require no further grounding itself. Finally, as I have done in the case of BT, I note some problems that confront even the best versions of ST.

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ontologies, see "A Critique of Campbell's Refurbished Nominalism" (1997) and "How to be a Nominalist in Realist

3.2.1 Moreland's Bare Particularism

One objection that seems to rule out the possibility of substrata or bare particulars from the start is the objection from the *Principle of Acquaintance* (PA). It is claimed that the postulation of such entities is inconsistent with empiricism since we could not be acquainted with them. Any simplistic Lockean account of substratum as an inferred "I know not what" support of properties seems vulnerable to this type of attack. Edwin B. Allaire[122] responds to objections of this sort, following Bergmann, by claiming that when we are acquainted with, say, a round red spot, we are in fact directly acquainted not only with the characters (or universals) round and red, but also with an individual or bare particular.[123] Allaire argues that phenomenologically speaking, when

> two things which are the same in all (nonrelational) respects [for instance, two qualitatively identical discs, are] presented together, they are presented as numerically different. That difference is presented as is their sameness with respect to shape, (shade of) color, and so on. What accounts for the difference is the numerically different individuals…. [T]he two collections of characters – if one persists in speaking that way – are, as presented, numerically different. Clearly, therefore, something other than a character must also be presented. That something is what proponents of the realistic analysis call a bare particular.[124]

This analysis is forced on us, Allaire thinks, since the trope bundle theorist cannot explain what grounds the non-linguistic fact of the sameness of two qualitatively identical objects, while the bundle-of-universals theory cannot account for the numerical difference between them. An

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Clothing" (1991).
[122] Originally published in 1963 in *Philosophical Studies*, 14, pp. 1-8. Reprinted in Loux (2001) *Metaphysics: Contemporary Readings*.
[123] Contra Russell, the fact that bare particulars cannot be recognized or reidentified (since they are merely numerically and not intrinsically different), does not prevent us from being able to be acquainted with them (118).
[124] Allaire, 119. The *locus classicus* for the objection from possibility of qualitatively indiscernible entities is Max Black (1952).

analysis that appeals to substrata along with universals succeeds, where bundle theory fails, in grounding these features in distinct entities.

Moreland (1998), in his own defense of a bare particularist solution to the problem of individuation, points out that Allaire's response is inconclusive since the particularity presented to us in experience may accrue to the two particular states of affairs (the qualitatively identical objects) themselves, and does not guarantee that we are directly acquainted with "the constituent that accounts for the thisness and thatness of each," that is, with the bare particular in each of the objects. This possibility arises from Moreland's view, which seems reasonable, that the individuation (and thus the particularity) of macro-level particulars (tables, chairs, etc.) may derive from the individuation (and particularity) of their lower-level substantial constituents (the wood, the atoms…) and that it may only be at the very lowest level that we reach substrata or bare particulars as the *ultimate* individuators. Nevertheless, argues Moreland, leaving the PA challenge unanswered ought not to trouble us, since most philosophers today do not adhere to the positivist empiricist constraints for analytic ontology from which the objection springs.[125]

Moreland goes on to consider three other objections that he thinks require a more subtle response.[126] Bare particulars are, for Moreland as for Allaire and Bergmann, the element in objects which bestows on them their particularity. The need for such entities is felt because of the realist view of properties that is adopted. Since nothing that is universal (shared by or common to many), nor any collection of universals, can individuate entities, some non-property

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[125] Moreland (1998), 256. He notes that even D.M. Armstrong, who is perhaps the contemporary ontologist most guided by empiricism, admits bare particulars as individuators. The greater concern, for analytic ontology, is whether bare particulars can offer a feasible solution to the problem of individuation.

ingredient is necessary to explain how it is that we could have qualitatively identical yet numerically distinct individuals. The first objection Moreland addresses is that the notion of a bare particular said to be required by the problem of individuation is incoherent and self-contradictory. On the one hand, bare particulars *by definition* possess or exemplify no properties (in themselves), yet on the other hand, it seems that they must possess or exemplify at least *some* properties if they are entities at all. Properties that are especially difficult to deny of bare particulars are the properties of being concrete, being particular, and being capable of bearing properties. Although Moreland also mentions such properties as being self-identical, being coloured if green, etc., I will not discuss these here on the grounds that they can be dealt with more easily by appeal to a sparse view of properties.[127]

Moreland thinks that the objection under discussion rests on a confusion about bare particulars. It is wrong to think of bare particulars as being completely without properties – indeed, according to Moreland, they *must* have properties in order to exist. But bare particulars, unlike the higher-level particulars (the objects or 'substances') to which they belong, are simple entities, and consequently, rather than possessing properties in the way higher-level particulars do (properties are 'rooted-in' the nature of substances), bare particulars have properties 'tied-to' them. The tied-to relation is distinct from the 'rooted-in' relation in that when a property is tied-to a bare particular, this is not reflected in any difference in the nature of the bare particular itself. Moreland expresses this view as follows:

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[126] As Moreland points out, these objections have been summarized in Loux (1978) and in Hoffman and Rosenkrantz (1994).

[127] For a good discussion on this, see Jonathan Schaffer's (2004) paper, "Two Conceptions of Sparse Properties," where he discusses Armstrong and Lewis on the topic.

> A bare particular is called 'bare', not because it comes without properties, but in order to distinguish it from other particulars like substances and to distinguish the way it has a property (F is tied *to* x) from the way, say, a substance has a property (F is rooted within x). Since bare particulars are simples, there is no internal differentiation within them. When a property is exemplified by a bare particular, it is modified by being tied to that particular. Thus, bare particulars have a number of properties, e.g., being red, and they have some properties necessarily, e.g., particularity, in the sense that a bare particular can exist only if it has certain properties tied to it.[128]

Since the having of a property by a bare particular does not result in any internal difference in the bare particular (but only in the property tied to it) the bare particularist can draw out the poison of the claim that bare particulars are self-contradictory by showing that although they always have properties (in the sense that properties are tied-to them), bare particulars remain propertyless (in the sense that no properties are rooted-in them). So at least on these grounds the notion cannot be accused of self-contradictoriness. This move, it should be noted, only works if both the simple bare particulars and the fact that properties are tied-to them are taken as primitives within the theory.

Another objection to substrata or bare particulars is that bare particulars either need to be individuated by some further element, or else are themselves not needed to individuate ordinary objects, since whatever it is that could individuate substrata could have been postulated instead from the beginning. If we admit that bare particulars possess various essential properties, then it is possible that, given any two bare particulars, *a* and *b*, they have all the same essential properties (e.g. particularity, concreteness, etc.). But then, the objection goes, "we would need to postulate further bare particulars to individuate *a* and *b*, and so on to infinity."[129] It seems

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[128] Moreland (1998), 257-258.
[129] This objection, as Moreland notes, is raised explicitly by Loux (*Substance and Attribute*, pp. 149-52) and is implicit in an objection raised by Hoffmann and Rosenkrantz (*Substance and Other Categories*, p. 51).

obvious enough, however, that this objection treats bare particulars as though they were bundles of properties. But Moreland's account cannot be criticized in this way since it depicts bare particulars as simples which just are (as a matter of brute fact) individuated and to which properties are tied (even if they could not exist without the properties that are so tied). So there is no need to look for further individuators for them.[130] Furthermore, there is no getting below the primitive fact about our universe that bare particulars are individuated and thus numerically distinct – so the claim that we ought to substitute whatever would have individuated bare particulars for the bare particulars themselves is also ruled out. Once the simplicity and primitive individuatedness of bare particulars is seen, the objection ceases to be well-motivated.

The final objection argues that if bare particulars are taken to be

> primitive individuative simples with properties tied to them in a
> primitive way ungrounded in capacities or properties within those bare
> particulars, it seems that it is inexplicable as to why bare particulars
> always come tied to certain properties (e.g., particularity). What is to
> keep them from simply splintering off on their own, as it were?[131]

And if this is a genuine possibility, then we seem to have been led to incoherence after all, in spite of what was claimed above, since that which *ex hypothesi* individuates properties might exist without any properties to individuate. Moreland's response is to insist that no bare particular could exist without at least some, perhaps very general or even transcendental, properties (particularity, simplicity, unity, reality, etc.) tied-to it. Or, Moreland claims, it may in fact be the case that existence itself must always consist either in property-possession (the object-mode of

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[130] Moreland (1998), 260.
[131] Ibid, 260.

existence) or being-possessed (the property mode). In either case, the possibility of free-floating substrata would be ruled out.[132]

3.2.2 Criticizing Moreland

In Moreland's bare particulars we have a fairly sophisticated version of substratum theory.[133] To recap, on Moreland's view, an ordinary object (a clothed or 'thick' particular) "assays out" (can be ontologically decomposed) into a simple, bare particular along with some universal properties and a tie of predication (the tied-to relation) that binds them together. This sub-section will focus on objections to Moreland's view raised by D.W. Mertz (2001), and will also examine Moreland's – and Timothy Pickavance's (2003) – response and Mertz's (2003) rejoinder.

Mertz's initial criticism of Moreland consists of three points. First, the positing of a "tied to" form of predication, distinct from the standard "rooted-in" form, seems to be *ad hoc* and motivated only by the desire to save bare particulars. But it is not entirely clear how serious a charge of *ad hoc*ery would be at this level. Moreland grants the *ad hoc* feel of the tied-to relation but argues that the dialectical pressures of the problem of individuation warrant appeal to it as part of the overall most reasonable explanation of the phenomenon of individuation in the context of realism about properties. The issue here turns on whether following the dialectic leads, as Moreland and Pickavance claim, to the "discovery" of the tied-to relation that holds bare particulars and properties together, or whether, as Mertz urges, this relation only serves as a

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[132] Ibid, 260-61.
[133] A similar version is advocated by D.M. Armstrong. Armstrong is in fact one of the biggest proponents of a bare particular theory in contemporary metaphysics. Although his view is not similar in every respect with that of Moreland, I take it that Mertz's criticisms apply with nearly equal force to Armstrong's view, and that responses

patchwork solution, in no way independently motivated, to cover a gaping hole in the fabric of a theory which ought, all other things considered, to be discarded anyway. Since a decision on this issue depends so heavily on the relative weights of the other virtues and deficiencies of the theory, I will be focusing (as in fact Mertz himself does) on these further issues and will not examine the effect of this particular charge further.[134]

The second criticism leveled by Mertz is that since, on Moreland's account, the descriptively empty nature of a simple bare particular is (and must be) utterly unaffected by what properties are tied to it, a bare particular can (in spite of Moreland's protesting to the contrary) exist independently of any such properties, which makes the fact that any property ends up being tied to it a contingent fact. Yet it seems as though some properties, like simplicity, must necessarily be tied to any bare particular, yielding a contradiction. Furthermore, since there is nothing in the nature of a bare particular to control for what properties can be tied to it, nothing could prevent contrary properties, like 'round' and 'square' from being tied to it simultaneously.[135]

Moreland and Pickavance (henceforth M/P) seek to fend off this objection by claiming that, in the first place, bare particulars do not have any necessary properties, though it is necessary

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parallel to the ones Moreland gives would be available to Armstrong. The remaining differences being relatively negligible, a separate treatment of Armstrong's position seems unnecessary.

[134] To use a phrase suggested to me in conversation by David Devidi, "charges of ad hocery stand or fall depending on what's going on around them." For the interested reader, I point out that the initial objection is found at Mertz (2001), 50. For Moreland's reply and Mertz's rejoinder see Moreland and Pickavance (2003), 7-8, and Mertz (2003) 19-20.

[135] Mertz (2001), 51. I will not be discussing Mertz's alternative proposal for individuation here, but will mention briefly that Mertz appeals to relation instances as the ontologically fundamental entities. The key advantage, according to Mertz, of relation instances over bare particulars is that there is no 'ontic separation' of intenstions from individuators, and consequently there is no need to postulate a tied-to relation, and thus no incoherence results.

that, in order to exist, they have some property (or other) tied-to them. In short, the (clarified) view of M/P is that "all properties of bare particulars are contingent in the sense that a bare particular need not have had those specific properties to exist; this does not, however, deny the fact that a bare particular must have some property or other in order to exist."[136] The denial, on behalf of M/P, that even properties like unrepeatability and simplicity are necessary properties, is effected by denying that these are genuine properties at all in the sense of there being ontological correlates to the relevant linguistic predicates. Unrepeatability, simplicity and particularity, then, either are disguised negative properties (lack of repeatability, of complexity, etc.) or are predicable in virtue of "brute fact[s] incapable of further analysis." To substantiate the latter possibility, M/P appeal to Husserl's view that "the categories of formal ontology, e.g., being an essence, being a property, being a particular, are not *in* the objects to which these categories truly apply as properties are."[137]

Mertz's rejoinder is that even if each of the predicates likeliest to qualify as a necessary property of bare particulars turns out to be a negative one, in order to avoid making negative predication into uninformative and arbitrary denials there must be some reason for excluding the negated features, and this reason can only be the existence of some positive characteristic that contributes to the bare particular's makeup. And furthermore, if, as seems to be the case, there are multiple negative predicates applicable to bare particulars, then multiple positive characteristics are needed, in which case bare particulars would be complex and not simple.[138]

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[136] Moreland and Pickavance (2003), 9.
[137] M/P (2003), 10; citing Husserl (1982), pp. 18-32. This certainly begins to feel a bit mystical.
[138] Mertz (2003), 19.

But both of these points run contrary to Moreland's depiction of bare particulars and threaten to revive the charge of incoherence.

The charge that negative predicates, when truly applied to some subject, require positive ontic correlates seems difficult to avoid, but may not cause much damage if M/P are granted their second strategy for dealing with the (apparent) necessary properties of bare particulars. Mertz does not discuss the possibility that these predicates could be truthfully applied in virtue of the unanalysable fact that bare particulars belong to certain formal ontological categories – a belonging that does not entail that anything corresponding to those categories are 'in' bare particulars. But in the absence of any clear explanation of how this could be so, at the very least, M/P would seem to owe us some reason why we ought to believe it to be possible.

To the other part of Mertz's second objection, the claim that contrary properties can be exemplified by the same bare particular, M/P reply that the alleged exemplification cannot occur, not because of anything in the nature of the bare particular itself, but simply as "a function of the nature of the properties themselves."[139] To give a simplistic example, the presence of 'green' in (some portions of) a leaf itself, rather than anything about the leaf's individuating bare particular, excludes 'orange' from being present in (those portions of) the leaf at the same time. Mertz counters this suggestion by reminding us that the nature of the tied-to relation necessarily leaves open the possibility of simultaneous possession of contraries. In standard exemplification, Mertz explains,

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the predicate intension (F [for monadic predicates] or R [for relational predicates]) has a role in revealing something about the nature(s) of the subject(s). This is so because *in a fact the union of an ontic predicate and its subject(s) require and presuppose of both a reciprocal compatibility of specific qualitative contents.*[140]

But since the tied-to relation cannot be exemplified in this way – because of the bareness of its bare particular relatum – we must conclude that it cannot be a standard relation. The unity it provides must instead be equivalent to the non-exemplifying "unity of arbitrary concatenation or blank association found in a list or class, e.g., {F,a} or {R,b,c}."[141] But if the tied-to relation is indeed completely subject-indifferent in such a way that the bare particular relatum neither limits nor conditions the relation in any way, then, argues Mertz, of necessity there will be "a compatibility between the relation, any intension, and any bare particular."[142] But this means nothing could prevent the bare particular from having both round and square tied to it at the same time.

Although M/P never take up this line of defense, as far as I know – there may be a way of dealing with Mertz's objection based on the idea, expressed in Moreland (1998), that bare particulars may only be the *ultimate* individuators and thus not be responsible for every case of individuation. According to this idea, macro-level particulars are individuated by lower-level particulars in a hierarchy of individuation, so that even though a number of properties are rooted-in the thick particular this would not necessarily require them to be tied-to the relevant

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[139] M/P (2003), 11. They note that Mertz's view that the *content* of a subject controls what is predicable of it actually accords with their view, since it entails that the subject *as possessing some property* and not *as particular* is what determines what else can be predicated of it (ibid, 12).
[140] Mertz (2003), 15. Italics Mertz's.
[141] Mertz (2003), 16. If the tied-to relation were a fully fledged relation, it would succumb to Bradley's Regress (Mertz (2001), 47).
[142] Mertz (2003), 17. This also explains what Mertz says elsewhere: "when construed as a contentless tie it becomes impossible to account for the order or direction of relational facts" (2001), 47.

bare particular. So, for instance, properties like round and square could be dealt with at the level of ordinary predication – the kind of predication that takes place at the level of thick particulars. And at that level there is no difficulty in saying that something in the nature of the particular exemplifying one property (round) excludes the possibility of its exemplifying other properties (square) simultaneously. If this maneuver can be made, then Mertz is incorrect when he attributes to Moreland the view that every atomic thick particular a "has a unique bare particular p_a such that, for every property F, F is rooted-in a if and only if F is Tied-to p_a."[143] And if that is the case, then the only way to make the objection that bare particulars may possess contrary properties stick is to find contrary properties that would apply to them at this ultimate level – contrary properties at the macro-level would pose no problem for them.

Finally, and according to Mertz more seriously still, by the *Principle of Constituent Identity*

(PCI)   (x)(y)[(z)(z is a constituent of x ↔ z is a constituent of
         y)→(x=y)]

which Moreland himself explicitly accepts, since bare particulars can have no constituents, they therefore have "exactly the same constituents and so are identical." But this implies that there exists only one individuator and hence only one thick particular.[144] In reply, M/P point out that (PCI) applies only to entities composed of proper constituents (constituents not identical to the composed entity), and so does not rule out the possibility of numerically distinct simple entities, that is, entities lacking any proper constituents, as bare particulars are taken to be.[145] To this Mertz levels another charge of *ad hoc*ery:

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[143] Mertz (2003), 15.
[144] Mertz (2001), 52.
[145] M/P (2003), 12-13.

> Why, other than to save bare particulars, must the principle be so restricted? Under the theory of bare particulars it is simply a 'brute fact' that two internally simple bare particulars are numerically distinct, and so accepting the theory one would have to restrict the constituent principle. But whether to accept the theory is precisely the issue.[146]

It seems correct to say, with Mertz, that if the very possibility of simple bare particulars is – as he claims to have shown it is – in serious question, our motivation for restricting (PCI) will be reduced.

At the same time, however, it does seem to be a rather dodgy move to infer from the claim that any two entities with the same constituents are identical that any two items with no constituents are identical. Since, according to (PCI) it is sameness of constituents that serves as the criterion for identity, in the case of two entities not possessing constituents at all, we might seem to naturally want some other criterion by which to judge questions of identity or diversity. Mertz's inference seems unproblematic in the case of set theory, according to which there can only be one null set. But it is not entirely clear that bare particulars are sufficiently like sets to warrant the application of the same move to them.

One might argue that (PCI) fails to give identity conditions that cover both complex and simple particulars by appeal to a similar case of a failed attempt to give identity conditions for propositions. Consider the following *Principle of World Identity* for propositions:

> (PWI) (x)(y)[(w)(w is a world in which x is true ↔ w is a world in which y is true) → (x=y)].

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[146] Mertz (2003), 20.

This principle of identity fares well enough for contingent propositions. But in two limiting cases it is inadequate. First, although the propositions expressed by the claims

> (a)   All animals are either mammals or non-mammals

and

> (b)   Every snail is a snail

are true in all and only the same worlds (since, like any tautology, they are true in all possible worlds) we certainly would not want to say that they are for that reason identical. Second, the propositions expressed by the claims

> (c)   There are mammals that are non-mammals

and

> (d)   There are dead snails that are alive

are true in all and only the same worlds (since, like any contradiction, they are true in no possible worlds), we would not for that reason want to say they are identical. In the case of (a) and (b), as well as the case of (c) and (d), we resist identification because the *contents* of the propositions expressed by them are clearly not the same, and the identity conditions for propositions should take content into consideration. Arguably, it is *because* propositions (contingent or otherwise) have the same content that they are true in the same worlds – content is, after all, at least part of what determines truth value. So, when faced with counter-examples to (PWI) the correct move is to replace it with some other more generally applicable principle of identity for propositions capable of covering the limiting cases.

What Moreland needs to say, it seems, is that the case of bare particulars is more like the case of propositions than it is like the case of sets. And there certainly is some similarity between the two cases – bare particulars can be seen as a 'limiting case' of particulars in that they are particulars without constituents, much as contradictory propositions are a limiting case of propositions in that they are true in no possible worlds. But to justify this claim, something would presumably need to be said about the reason why simple particulars present a legitimate counter-example to (PCI), something along the same lines as what was said about content in the case of (PWI). What feature common to both bare (constitutively simple or empty) and thick (constitutively complex) particulars does (PCI) fail to capture? One attempt to give such a feature would be the following *Principle of Individuative Identity*:

$$(PII) \quad (x)(y)[(i)(i \text{ is a principle of individuation for x} \leftrightarrow i \text{ is a principle}$$
$$\text{of individuation for y}) \rightarrow (x=y)].$$

The parallel might not be complete; it is not clear, for instance, that it is *because* x and y are individuated by the same principle that they possess the same constituents. (PII) also has a feeling of circularity about it when considered as applied to bare particulars themselves, since the principle of individuation for a bare particular is just itself. But when dealing with simple entities like bare particulars, this might be the best we can expect. Whether or not (PCI) leads to the collapse of all supposedly distinct bare particulars into a single individuator remains inconclusive, at least until these issues are better sorted out.

After the dust of the M/P-Mertz debate has fallen, the most serious difficulty that remains standing against M/P's bare particularism is the extreme counterintuitiveness of the attempt to uphold the doctrine of the utterly contentless 'natures' of bare particulars by denying that even

the properties of simplicity, unity, particularity, etc. are properties necessarily attributable to them. None of the ways of accounting for this on offer by M/P are convincing, at least not without a significant amount of further explanation. I have suggested a way of avoiding the problem of bare particulars possessing contrary properties by appealing to levels of individuation and claiming that properties that are predicable at one level may not be applicable at other levels. But seeing bare particulars as ultimate individuators and thus not the proper subjects of at least some of the properties that apply to thick particulars offers no escape from the implausibility of the claim that bare particulars have no positive characteristics necessarily.

3.2.3 Martin's Neo-Lockean View

Moreland's version of ST arose in the context of realism about universals. The need for bare particulars was felt because the phenomenon of individuation could not be accounted for if all the constituents of an object are universal properties. But substrata have been put to use for other purposes as well. In particular, in the context of a trope theory of properties, substrata are not needed to serve as individuators, since tropes come pre-individuated. But substrata are still appealed to in order to serve as unifiers of the various diverse properties that come together to make up an object. If no version of bundling or compresence is fit to the task, perhaps postulating a non-property ingredient to which all the properties are tied will be. And in any case the need is present for something to serve as the ontological ground for tropes, which are seen to be dependent entities. This seems to have been the primary motivation for John Locke's doctrine of substratum, for instance.

Martin (1980) presents a refurbished, Lockean view of substrata. Since it is possible to attribute properties to other properties, we must say not only that the substratum is the support or bearer of properties, but also that it is not itself supported or borne by anything.[147] But, as Locke noted, such an item seems to be unknowable, since we only know things by their qualities. This, of course, is a version of the objection from the PA discussed above. The Lockean answer to this criticism, according to Martin, begins with the view of complex general ideas as *partial* in the sense that they include only the 'leading or characteristical' feature of whatever kind is picked out, abstracting from other features which an object belonging to that kind would also need to possess in order to exist. In the case of the general idea of a substratum, the leading feature is its *being the bearer of properties*. The leading feature of the correlative general notion of 'property' is then just *being borne*. Neither the properties borne nor the bearer are objects in their own right, nor are they parts of objects.[148] Instead, they are each something *about* the object. When it is understood that "the object *qua* object is *both* the bearer of properties and the properties borne," the objection that substrata are necessarily unknowable ceases to pose a problem, since we clearly know objects.[149]

This is supposed to help give a coherent idea of a substratum because nothing is claimed to exist possessing only the feature of being a property-bearer. Every existing substratum will bear

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[147] Martin, 4. See Locke's *Letters to Stillingfleet* (p. 245, 2).

[148] The fact that neither substrata nor properties are objects explains, in Martin's opinion, why the relation that holds between them is unlike other relations.

[149] Martin, 7. A further argument against substrata mentioned by Martin goes as follows: "we come to believe in the need for substrata simply because it is suggested by the subject-predicate form of our language (and also, presumably, by the (∃x) of quantification in logic). Then it is argued that some languages (and also, presumably, some logics) don't have this subject-predicate form. So, the conclusion seems to be that the notion of, and supposed need for, substrata is due only to, and suggested by, a local, parochial linguistic form" (Ibid, 8-9). Martin's primary reply is that "if some languages suggest a substratum and some do not, the question should *still* arise 'Which are *right?*' Then the argument for substrata, and against alternative theories, would have to be considered" (Ibid, 9).

properties (and usually *many* properties). Specifically, it will bear whatever properties belong to the object in question. It is clear that Martin thinks this analysis of objects as requiring both properties and a bearer of properties applies to any and all objects:

> And even the finest parts right down to those objects that are the 'insensible corpuscles' of physics are such that, like the larger, observable wholes they might make up, there is that *about* them that is the bearer of properties, and that *about* them that is the properties borne.[150]

Wherever a property is, a substratum comes along with it. So on Martin's view, at the ontological ground-floor (assuming there is one) there will necessarily be complex items – substrata each of which possess at least one property. But what needs to be kept in mind when considering Martin's view is that substrata are not taken to be independent objects in their own right. They are not objects, but something *about* objects. So it will never be the case that property-less substrata are found.

The following is a distillation of the argument Martin gives for the need for substrata:

1. Properties are not independent or arranged (or, we might add, additive).[151]

2. Properties are not parts of objects. (from 1)

3. Objects are not collections of properties, contra BT. (converse of 2)

4. Properties need to be borne by something. (from 1,3)

5. There must be something about a given object that is the bearer of properties (a substratum, in other words). (from 4)[152]

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[150] Martin, 8.

[151] Martin puts this point insightfully: "…the top half is a part of an object and not a property of it. That is, what is referred to as 'the top half' can be thought of under some other description as an object that could have existed without need of being the top half of anything, but as an object existing in its own right," which is not true of a standard property. Of course, if Robb is correct, then this will not apply to the basic tropes.

We need properties in order to distinguish what it is about an object that makes true diverse predications about it. When it is true to say of, for instance, a passionfruit, that it is round and purple, it will not be the whole object that makes true both predications, but in each case something distinct and particular about it. We also need properties to explain the phenomenon of real (intrinsic, as opposed to extrinsic) change. Martin writes, "Real change to an object is more than the change of predicates coming to be true or false of an object. The *what about* the object that is different (namely its properties) is needed as well."[153] Properties, however, cannot support themselves in existence – any property is a property *of* something. So in addition to properties, we need that which bears the properties without being borne by anything else. So, says Martin, "The passionfruit under this partial consideration, and incomplete description, is indeed the substance or substratum." Again, the object is the substratum *and* the object is the properties – each of these aspects of an object can be properly separated out only mentally and not in reality.

3.2.4 Problems with Martin's view

Lowe (2000) agrees with Martin in seeing Locke as taking properties to be particularized ways objects are, and as dependent entities which are only improperly viewed as parts of a whole.[154]

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[152] The passage where the complete argument is closest to being presented is on Martin, 7-8: "If properties are not to be thought of as parts of an object, and the object is not then to be thought of as a collection of properties, as its parts may be, then there must be something *about* the object that is the bearer of the properties that under any description need to be borne. And *that* about the object is the substratum."

[153] Martin, 9.

[154] "Locke thinks that, precisely in as much as we conceive of the qualities of a thing as having the status of modes, or dependent beings, we cannot help but suppose that, whenever we observe certain qualities to be co-instantiated in nature, there is something upon which they depend for their existence and union, something in which they 'inhere' and which 'supports' them" (506).

Lowe also notes that Martin's account, insofar as it distinguishes substrata from crudely conceived bare particulars, avoids some common objections. To the claim that substrata are self-contradictory (since they must both possess and lack properties) Martin can answer (even if he in fact does not) that the view of substrata as necessarily possessing at least some properties "is founded upon an illicit tendency to think of substrata as objects of a queer sort, when in reality they are something 'about' objects, their property-bearing aspect."[155] Furthermore, as noted above, seeing substrata as incapable of existence independent of objects, Martin also side-steps the argument that there could be free-floating naked substrata. And, on Martin's account, substrata are knowable, since we can partially consider "what it is 'about' the object that is a bearer of its various properties – what it is 'about' the object that is needed for us to have before us an object, rather than merely various compresent properties."[156] We thus know substrata not only via their properties but even to some degree 'in themselves'.

But according to Lowe, Martin's account does not line up with that offered by Locke on two counts. First, Locke's empiricism prevents the possibility of forming an idea of a substratum by abstraction or 'partial consideration' of the contents of experience, since no non-quality would ever be a part of the contents of experience in the first place. And secondly, Martin's account presents substrata not as objects (that is, not self-subsistent entities), but as aspects of objects; Locke, on the other hand, claims fairly clearly that substrata are self-subsistent.[157]

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[155] Lowe, 511. Note that Lowe thinks appealing to sparseness may be an appropriate move here as well.
[156] Lowe, 510.
[157] Lowe, 512-13. Locke says explicitly that the best notion of substratum available is "that it is '*Ens*' or '*res per se subsistens, et substans accidentibus*'" (Letter to the Bishop of Worcester, p. 8).

More important for our purposes are the philosophical inadequacies of Martin's view. Firstly, by taking the substratum to be a distinct aspect or ingredient of an object, Martin's account becomes subject to Bradley's regress. For even if the relation that binds substrata and properties is non-standard – it holds not between objects but between *aspects* of objects – it is nevertheless a relation. But then we are led to ask what it is that unites the substrata, the properties and the relation together into a coherent unity, and we find the need for a further principle of unity, and the regress goes on.[158]

Secondly, there seems to be no reason to postulate a substratum, as a distinct constituent of an object, to serve as the bearer of the object's properties when the object itself is already available to fulfill this role. On Lowe's positive view, "the substratum of an object's properties is to be identified with that very object."[159] Objects, Lowe argues, meet the traditional desiderata of substratum theory – they support properties in the sense that without them properties (as modes of the object) could not exist, without being properties themselves. But unlike Lockean substrata, Lowe's are knowable via their properties, and unlike Martin's, they are self-subsistent. They 'possess' properties but not in any sense that leads to a regress since there is no genuine relation of support between them:

> a quality is a quality 'of' its substratum, which is the qualitied object
> itself, not some peculiar constitutent, aspect or ingredient of the object.

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[158] A hylomorphic approach might be capable of handling this kind of regress. Thanks to Joseph Novak for pointing this out to me.

[159] In stating that, for instance, a passion-fruit, when partially considered, *is* the substratum, Martin is close to adopting the same view as Lowe, however, he distances himself from this possibility by claiming explicitly that the substratum is something *about* an object, not an object in its own right (See Lowe, 514).

> But 'ofness' in this sense does not express a genuine relation in which
> two items stand to one another, a kind of metaphysical bond or glue.[160]

So Martin's view seems to be inadequate in at least these two ways. Whether Lowe's positive view is a genuine improvement over Martin's, and whether it is still a version of ST or is rather a brand of the theory to be considered in the next section are questions that remain to be answered.[161]

There are further objections to the notion of substrata that come from considerations of artifacts. Take a rubber ball, for instance. It seems as though a rubber ball consists of two roughly semi-spherical halves, which are themselves capable of independent existence and therefore seem to be objects within the original object. Do each of these halves then possess a substratum? If not, why not?

Further, if every object possesses a unique substratum, what happens (to the substratum) when an object is destroyed? Let's say, for instance, that we have a living human being, which dies. We might want to say the corpse is no longer the same object as the living being, and we might even have reasons for saying it isn't an object any longer at all (a corpse is only a collection of parts whose relations are in the process of dissolving). But then does the substratum of the original living body somehow dissociate itself from the body on death, and continue to exist indefinitely, or is it annihilated? If the latter, the question arises as to how

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[160] Ibid, 513-14.

[161] On Lowe's view, the substratum of an object is the object itself. The next question to ask is, what then is the object? He says it is emphatically not a collection of properties (which, being ontologically dependent, could not result in an independent thing). For the answer to this, we have to look to Lowe's writings elsewhere. In his (1998) "Form without Matter," he identifies objects as instances of substantial universals (see, for example, p.9), which

something with no properties of its own (e.g. perishability) could be annihilated. Since the corpse continues to exist, is the substratum of the original living body replaced by a corpse-substratum instead? Unless something like Moreland's point about the ultimate individuators belonging only to the lowest-level objects is taken into account, it is not clear how the advocate of ST will avert the force motivating this kind of objection.

Simons (1994), while admitting that Martin's view is a genuine improvement on more naïve versions of ST, points out a different problem:

> That about a bearer of properties (i.e. here, tropes), that it is a bearer of tropes, is either not itself a trope, or, more plausibly, it is a second-order trope, supervening upon there being first-order tropes the substance has. In either case, it does not explain how it comes about that there is something other than the bundle of tropes that bears the tropes, nor does it help to explain what this relation of bearing is.[162]

Obviously if the substratum is a trope, the whole purpose of introducing it in the first place will have been thwarted. Of course, Martin would likely not be happy with saying that a substratum is just a kind of property, but it's not clear what else a non-self-subsistent aspect of an object can be. Furthermore, to describe substrata as partially considered objects (bearers), whose other aspect is being borne is merely to redescribe the original problem of the nature of objects, rather than to give an account of it. So we are no further along than when we started. "If no further explanation is forthcoming," Simons writies, "we have not a substratum theory but a particularist equivalent of what Loux calls a *substance theory of substance* [and of what I call a Non-Reductionist assay of objects]. That is to say, the notion of substance remains basic."[163] But this,

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seems to make his version of ST barely distinguishable from some of the non-reductionist positions to be discussed below.
[162] Simons (1994), 567.
[163] Simons (1994), 567.

Simons thinks, is a last resort that does not need to be taken since his own nuclear trope version of BT offers an account of objects that gets a fair distance beyond this starting point.

3.2.5 Conclusion

We have considered a version of ST that takes properties as universals and substrata as simple contentless individuators, and a second version of ST that views properties as tropes and substrata as aspects of objects that cannot exist independently of them any more than their correlative properties can. Both of these views are more subtle, in significant respects, than their historical predecessors. Nevertheless, there are also problems with them both that have not been answered satisfactorily as of yet, and that are likely unanswerable. The most serious problem for the first version is its failure to present a plausible story of how bare particulars can be literally contentless while apparently having to possess certain features. And the substrata postulated by the second version seem unnecessary from one perspective, and from another to be just another kind of trope.

There are also criticisms that can be leveled at BT and ST simultaneously. The idea here is that the whole ontological reductionist approach is misguided. For one thing, a non-reductionist might say, the concept of a concrete particular cannot be adequately analysed in terms of more basic constituents, so that "the ontologist cannot get below the concept of a concrete particular."[164] In fact, it is alleged, each of these constituents is only intelligible in the first place from within an antecedently given conceptual framework of concrete particulars. Furthermore, in spite of attempts like Robb's to make out a general sense of parthood, taking properties (or

properties plus a bare particular) to be constituent parts of a concrete particular, remains a kind of category mistake, ultimately modeled inappropriately on empirical science's notion of molecules composed of atoms. It is also argued that reductionist views do not adequately take account of two important distinctions: the first is the distinction between kind or constitutive attributes ('human being', 'dog', 'oak', etc.) and characterizing or non-constitutive attributes (like 'red', 'round', 'juicy', etc.), the former of which are not analyzable in terms of the latter; the second is the distinction between essential and accidental attributes. Non-reductionist attempts to give an ontological assay of objects will be considered next.

3.3 Non-Reductionist Theory

Both the Bundle Theory and the Substratum Theory can be seen as reductionist perspectives in the sense that they take substances to be reducible to their ontologically more fundamental constituents (their properties, on BT, or their properties together with their substrata, on ST). Objects are reducible to their ontological elements in the sense that if it is asked what an object is, the reply will be that an object is (identical to) a bundle of properties or a substratum and its associated properties. Since, as we have seen in the previous two sections, there are strong reasons to doubt that either reductionist ontological assay succeeds, we seem to be in need of some kind of *non-reductionist* theory of objects. A non-reductionist account would argue that objects are ontologically atomic or basic ontological units in their own right, rather than composites of more basic items.

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[164] Loux (1998), 108.

A natural way to proceed, attempting to walk the non-reductionist road, would be to deny, with the "austere nominalist," that concrete particulars have any ontological structure for the metaphysician to characterize. According to austere nominalism, there are objects but no properties. The facts that we attribute redness to a given apple and say that a given fire engine agrees with the apple in its color attribute do not imply the existence of properties (whether these are seen as universals or as tropes). Rather they are "fundamental and unanalyzable feature[s] of the world…. There are no prior facts that serve to explain these facts; they constitute the primitive materials out of which we construct our story of the world."[165] The costs of denying that there are properties seem to be fairly high, but I will not at this point look any more deeply into the coherence of this analysis of attributes. I mention the view primarily by way of contrast to the non-reductionist view that will take up the bulk of this section.

Versions of the *Non-Reductionist Theory* I have in mind (I will henceforth refer to it as NRT) have been presented by Michael Loux (1978, 1998, 2006) and by Cynthia Macdonald (2005), among others. According to NRT, the category of properties is genuinely distinct from the category of objects. However, the properties an object exemplifies are not in any sense parts or constituents of it. After a mildly critical exposition of each of these related accounts, I will present what I take to be some fatal objections to the non-reductionist project.

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[165] Loux (2006), 53. Loux discusses this view in pp. 52-62. More about it will appear in my critique of Loux's view later in this section.

3.3.1 Loux and Wiggins

Loux has proposed an account of objects (concrete particulars, in his terms) which he calls a 'Substance Theory of Substance'. It is a view, inspired by Aristotle and advocated by David Wiggins among others, according to which objects are seen as fundamental, irreducibly unified entities, which nevertheless retain a complex ontological structure insofar as in each object a "core of being" or essence can be distinguished from its contingent or accidental attributes.[166] An object is given its essence by virtue of its instantiating a kind-universal (e.g., sheep, maple) and has its essence necessarily. Loux writes, "to be an instance of a kind is simply to exhibit the form of being that is the kind."[167] So the irreducible unity of objects derives, on this view, from the irreducible unity of the kinds – the fundamental "forms of being" – they exhibit. But the object will also be characterized contingently or accidentally by a number of properties extrinsic to its core or essence, and these do not play any role in determining *what* the object in question is. Instead, this is done antecedently, by the kind instantiated. It is the essence that makes the object *what it is* – an object of a certain kind. So there is, in the analysis of objects, ontological complexity to be discerned.[168]

The discernible ontological complexity, however, is not like the complexity attributed to objects by either BT or ST, which see objects as built up from ontologically more basic items. On NRT, objects (at least the genuine ones)[169] are what we find at the ontological ground floor,

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[166] For Aristotle's presentation see *Categories* 5; *Physics* II.1 and 8; *Metaphysics* Zeta and Theta.

[167] Loux (2006), 110.

[168] Loux thinks the ability of this position to account for the distinction between essential and accidental attributes differentiates it from bundle theories. Although Loux does mention Peter Simons' view in a footnote (ibid, note 27, p. 119), he does not seem to be aware of this as a version of BT that incorporates the essential / accidental distinction quite effectively, perhaps because he concerns himself mainly with versions of BT that are realist about universals.

[169] Proponents of NTR often hold that only certain concrete particulars count as genuinely unified basic entities or substances in this sense. Aristotle's own view was that the only real candidates were individuals belonging to the

and there is no getting beneath them. Contra BT, NRT asserts that no amount of properties can provide sufficient resources to recover the concept of an object, which must instead be given at the start of the ontological project. This is evident from the fact that properties are not even "intelligible independently of the framework of material particulars."[170] According to NRT, both BT and ST are guilty of making attributes *parts* of objects, in a confused and "bizarre mimicry of physical scientists" as though attributes alone, or in addition to substrata, could come together to yield objects, as atoms come together to make up molecules.[171] The kind to which an object belongs is not a part of that object, to be joined with various properties to compose a whole; instead, the instantiated kind is "*what* that object is."[172] NRT also has to be distinguished from ST, even though the two approaches are in agreement that the properties attributed to objects need a subject to exemplify them. On NRT, the subjects are not (as bare particulars are) constituents of objects; rather, they are the objects themselves, whose identities are not distinct from at least some of the attributes they exemplify – namely, the kind-universals they instantiate.[173]

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basic natural kinds, that is, the biological kinds and the "kinds posited by our best theory of the material constitution of the universe." (114). But what ought we to say, then, about the non-substance concrete particulars? One line of approach – made familiar by van Inwagen – is to deny that they exist, when speaking about existence strictly. I have considered this question in the first part of this dissertation, so I will not go into it again in detail here.

[170] Loux (2006), 108. "Our concept of a color," Loux continues, "is, in the first instance, the concept of a visible feature of the surface of a material object; our notion of a shape is the notion of an attribute concrete particulars exhibit in virtue of the relations that obtain among their physical parts; and the concepts of a weight or a size are ideas that can be understood only by reference to complex systems of measurement that already presuppose an antecedently given framework of concrete particulars."

[171] Loux (2006), 108.

[172] Loux (2006), 110-11.

[173] Loux writes, "Take the man away from Socrates and there is nothing left that could be a subject for anything" (2006, 111). It should be noted, however, that the identity of the subject will not necessarily involve its accidental attributes in a similar way.

The key virtue of NRT, relative to reductionist ontological assays, is that it holds that among attributes, in addition to the property-universals *possessed* by concrete particulars, there are also the *kind*-universals to which concrete particulars *belong*. Kinds represent forms of being not reducible to any collection of properties. Objects exemplify kind-universals by instantiating them, in virtue of which they can be said to belong to their respective kinds.[174] Intuitively, the question "What is x?" is properly answered by citing the kind to which x belongs, not by listing x's properties. It does seem to be an advantage of NRT over BT/ST that it meshes with this intuitive account of what a thing essentially is, in a way that the other views seem unable to do.

To see this more clearly, compare two ways of answering the question, "What is that x over there?"

(1)   That x is (a) a bird, (b) a table, (c) an electron, (d) Peter…

(2)   That x is (a) seated, (b) yellow, (c) angry, (d) banana-shaped…

The answer form displayed by (1)'s examples – that is, the answer given by appeal to kind or sortal terms (or, perhaps, to rigid designators, as in (1d)) that, seemingly, stand for essences – strikes us as appropriate, but that displayed by (2)'s examples does not. It might be asked why BT (or ST) could not use the same sortal terms to answer the 'What is x?' question, without having to say that the terms so used stand for essences. Could not sortal terms merely be cooked up for convenience's sake, as a shorthand way of referring to various relevantly similar bundles, which we group into classes not on account of shared, irreducibly unified essences, but only

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[174] Loux (2006), 109. The talk of belonging and membership employed by NRT should not, however, mislead us into thinking that they are the same as sets. Most importantly, where sets are determined by their members, kinds are prior to theirs.

because we notice that certain properties happen to hang together in the world? While it may be true that the correct (ontologically accurate) way of answering the 'What is x?' question in the case of objects is to say that x is a bundle of such and such compresent properties (BT) or that x is a substratum to which such and such properties are tied (ST), neither of these views captures our ordinary practices of singling out objects in experience and tracking them through time.

David Wiggins (2001) has argued that our abilities to deal with questions of the identity of objects depend on our being able to grasp, to some degree, the senses of sortal terms (terms which stand for kinds). Identity, Wiggins says, is sortal-dependent and is determinate and all-or-nothing (that is, not relative to any descriptive context). We single objects out and track them across time by appeal to (often irreducibly practical) principles, derived from our understanding of the kinds picked out by the relevant sortal terms, which provide us with the identity conditions of those objects. And it is by virtue of the fact that it provides an answer to the 'What is it?' question that the kind makes possible the practice of singling out or individuating objects in experience. This practice, then, is something we should want our theories of objects to be able to explain since, as we have seen in the analysis of the intention of particularity in Chapter Two, all objects will possess a determinate identity in virtue of their particularity, and since, further, diachronic identity (possession of determinate identity over time) depends on synchronic identity (possession of determinate identity at a given moment). Even if there could be instantaneous objects (a possibility I earlier tried to remain open to), they would possess determinate synchronic identity, and it will (at least in many putative cases of instantaneous objects) only be a contingent matter that they cannot possess a diachronic identity – there seems to be no reason why there could not be a possible world in which the odd circumstance that

they are annihilated a single instance after beginning to exist did not take place. So the fact that NRT, in virtue of its more adequate account of identity, does, in general, a better job accounting for diachronic identity as well, and hence of the practice of tracking objects through time, seems to be a point in its favour.

BT and ST also reverse the intuitive order of priority apparent in explanations of the following kind:

> O: x weighs approx. 425 lbs *because* x is a mature male black bear.

In this statement, the explanation for the possession by the object of a given property (the 425 lb weight) is given in terms of the kind to which the thing we're dealing with belongs (a bear). Because x is a thing of this kind (which naturally parses out as "Because of what x *is*") x has such and such a property. As Loux writes, "it is because it belongs to the kind that it possesses these properties and not vice versa."[175] BT (and ST) seems to have to say instead,

> E: Because such and such properties are compresent here (are tied
>   to this bare particular), we have (what we call, for pragmatic
>   reasons) an individual of this kind (e.g., a bear).

I have labeled the claims on display here (O) and (E) to indicate that the former, (O), offers what we might call an ontological explanation (which must be a sort of causal explanation) while the latter, (E), provides, if anything, an *epistemological* explanation or, better yet, an epistemological *criterion* for deciding whether or not a thing of a certain kind is present. Ontological / causal explanations like (O) naturally attribute explanatory priority to the kind or nature of an object,

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[175] Loux (2006), 110. Loux provides the following example: "Thus, the things that belong to the kind geranium will have a characteristic shape; their height and weight will each fall within a certain range; their leaves will be of a certain shade of green; their flowers will have a certain configuration."

seeing the properties as somehow 'following' or 'flowing' from it, even if our understanding of the nature in question is incomplete, and is derived from our experience of the qualities of the thing (or of the qualities of other instances of the same kind). All this seems consistent with postulating that, as Wiggins says, the kinds designated by genuine sortal terms will bring with them certain a posteriori laws of coming to be, of continuity, growth and development, and of ceasing to be that will govern the things that instantiate those kinds.

Wiggins is concerned to show how Putnam's account of natural kind words, combined with an understanding of the significance of the 'What is x?' question, inform our practices of individuating and tracking objects. Although the use of a natural kind word will not depend on a full understanding of the theory of that kind, such a theory or "nomological grounding" must, in principle, be available, if indeed the sortal term denotes a natural kind. If so, "then" according to Wiggins, "the holding of the relevant principles is constitutive of its exemplification by its instances. To be something of that kind *is* to exemplify the distinctive mode of activity that they determine."[176] And these lawlike principles in nature are what "determine directly or indirectly the characteristic development, the typical history, the limits of any possible development or history, and the characteristic mode of activity of anything that instantiates the kind."[177]

To remind the reader of Wiggins' position, I will cite again one of the passages discussed in 2.2, which contains a succinct summary of his view:

> Starting off with the almost pre-theoretical idea of a sortal predicate
> whose sense is such as to depend on the sort of thing that lies in its

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[176] Wiggins (2001), 80.
[177] Ibid, 84.

extension – the kind of predicate that cries out for real definition – we are led to speculate what holds together the extension. So soon as we find that, we find lawlike norms of starting to exist, existing, and ceasing to exist by reference to which questions of the identity and persistence of individual specimens falling under a definition can be arbitrated. Such norms will supervene on basic laws of nature…; they may be understood as certain *exploitations*, so to say, of these laws. But now we are led by simple conceptual considerations to precisely the account of living substances that biologists can fill out *a posteriori* by treating them as systems open to their surroundings, not in equilibrium with those surroundings, but so constituted that a delicate self-regulating balance of serially linked enzymatic degradative and synthesizing chemical reactions enables them to renew themselves on the molecular level at the expense of those surroundings, such renewal taking place under a law-determined variety of conditions in a determinate pattern of growth and development towards, and/or persistence in, some particular form.[178]

My purpose in mentioning Wiggins' ideas is to show the intuitive power behind the idea of kind-universals, and also to give some indication of how an account of such kinds might be spelled out in greater detail than Loux develops it. I have so far been recounting what I take to be the broad outlines of NRT and of its intuitively appealing features. Next I will treat NRT's more problematic aspects in some detail. But before I get to what I see as the really fundamental issues, I will mention, for the sake of approximating completeness, three of the potential difficulties Loux himself addresses toward the end of his presentation of NRT.[179]

The first problem Loux addresses is that, since many different kind-universals are exemplified by living beings, it would seem that any substance would possess multiple distinct essences. But this result can be avoided, Loux thinks, if the various kinds are seen as composing "a nested hierarchy… [in which] the more general kinds are included in or implied by the less general," so

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[178] Ibid, 86.
[179] Since the fourth problem he discusses is one I have already addressed elsewhere – namely the problem of what items to include in the (metaphysically strict) extension of 'object', and what to say of the items that we ordinarily take to fall under that extension – I will not raise the issue again here.

that "the lowest-level kind, the *infima species*… gives us its complete essence."[180] The idea here is that, for instance, 'primate', 'mammal', 'vertebrate', and 'animal' are all somehow included in 'human being' and so only the latter, most specific kind-universal is the one that truly provides the essence of human beings. Secondly, some essentialist theories (Loux calls them *Leibnizian*) claim that substances must have individual essences, as opposed to the shared, general essences advocated by NRT, in order to resolve certain philosophical difficulties. So defenders of NRT need to provide an account of the identity properties (e.g. being identical with Socrates) which Leibnizians see as individual essences, as well as an account of how NRT can resolve the relevant philosophical problems. Loux gestures at some possible approaches (deny that any such properties exist; argue that they are reducible to the accidental and essential attributes associated with an object) but does not take a clear stand on which of these he favors.

A third difficulty arises from physical reductionism, which might be seen as threatening to make living beings into "mere collections of their physical parts." But in the case of commonsense parts ("things like arms, legs, eyes, kidneys, heart, and stomach") rather than posing a problem, Loux follows Aristotle in arguing, such parts actually lend support to the view that substances are irreducible unities since they are what they are only in the context of the role they play within the larger system; their essences make reference to the (prior) wholes of which they are parts.[181] Parts in the physicist's sense (ultimate or elementary physical entities), on the other hand, although not dependent for their identity or existence on the wholes of which they are parts, can yet, when involved in the living system, be considered as "*virtual* or *potential*

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[180] Loux (2006), 115.
[181] Loux (2006), 116. See Aristotle's *De Anima*, II.I (412b10-24).

substances."[182] By this, we must presumably take Loux to be saying that the identity conditions for, say, a carbon atom, while joined to other atoms to form a molecule that plays some role within the workings of the cell of an organism, are distinct from the identity conditions it possesses when it is, say, floating about in the air. In the latter case but not the former, it will be an identifiably independent object in its own right.[183] An additional response to the objection, says Loux, is that the necessarily teleological nature of living beings does not seem capable of being accounted for in terms of non-teleological items.

I think Loux deals with these points in a more or less satisfactory way. But there seem to be more pressing issues facing NRT. According to Loux, NRT deals with the problem of explaining both the particularity and the numerical difference of objects simultaneously. Whenever a kind-universal is instantiated, an individual or particular of that kind exists which will be numerically different from any other instantiation of that kind. All that is needed to be a metaphysically individuated object, on NRT, is to instantiate some kind. So, on NRT, the possibility of numerically distinct yet qualitatively identical particulars is unproblematic. Loux explains,

> in virtue of instantiating the proper kind to which both belong, each of the qualitatively indiscernible objects is marked out as a particular numerically different from the other. Their shared kind, then, diversifies the two objects, so even though they share all their additional attributes, all their properties, they remain numerically distinct. Their numerical diversity is given us in the ontologically fundamental fact about them, that they instantiate their proper kind.[184]

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[182] Loux (2006), 117. See also Aristotle's *Metaphysics* Z.16 and H.5,6.
[183] I will not investigate the plausibility of this sort of belief here, mainly because, as I have said, none of the difficulties Loux raises seem as serious as those I will mention in the next two sub-sections.
[184] Loux (2006), 112. As Loux points out, "[a] property, by contrast, is numerically identical in its different instantiations. If two objects exemplify the property of redness, there is something, redness, that is literally the same in the two objects."

Loux refers to kind-universals as "individuative universals" and seeks to explain how this works by means of a metaphor according to which kinds are "ontological cookie cutters" which "go around the universe, so to speak, partitioning it into the discrete particulars that are their instances."[185] This metaphor, and the process of individuation performed by kind-universals it purports to elucidate, require some serious unpacking in order to be made intelligible and unmysterious. *Prima facie* it seems highly unlikely that a universal, which is by definition something that can be common to or shared by many individuals, could be the individuating principle that causes items to be numerically distinct. Before moving on to the critique of NRT proper, I will first consider a recent variant of the view, developed by Cynthia Macdonald, the most noteworthy feature of which is that it seeks to answer the objection we have just raised to NRT as developed by Loux.

3.3.2 Macdonald's Property-Exemplification Account

Cynthia Macdonald's version of NRT, presented in her (2005) *Varieties of Things*, differs in a couple of ways from Loux's version. First of all (and this may ultimately be no more than a matter of terminology), Macdonald refers to what we have so far been calling kinds or kind-universals as "substance-kind" or "constitutive" *properties*, and contrasts them with characterizing properties.[186] She thus refers to her own account as the "Property-Exemplification account of

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[185] Ibid, 116.

[186] At some points, Macdonald's way of drawing this distinction is unclear and misleading. She says, for instance, that "the exemplification of a property is (i.e., is identical with) the thing that has it…. So, an exemplification of the property, black, is the substance that has it, a substance that is in fact black (e.g., a black cat)" (117). But surely the exemplification of a property (especially an accidental property like black), if it is anything, is something *about* a substance, or something a substance *does*, rather than being identical to the substance itself. Granted, she claims that her way of speaking is equivalent to the ordinary accidental / essential locution concerning properties, though it is not clear why she feels compelled to abandon this clearer locution.

Substances" (PES). Her description of the nature and function of substance-kind properties carries distinct echoes of the description of kinds given by Loux:

(a) Individual substances are identical with exemplifications of their kinds.

(b) These exemplifications (instances) are themselves capable of exemplifying (in the sense of possessing) characterizing features.

(c) Substance-kind properties "by their very nature, ensure that when they are exemplified they are exemplified by a single thing."[187]

(d) The lowest-level kind attributable to a substance (e.g. cat) gives its full essence, in the sense that the more general kinds (e.g. mammal, vertebrate, animal…) are implicitly contained in them.[188]

(e) Substances change by being the same instantiation of a kind through time while gaining or losing one or more characterizing property.

Yet Macdonald's claim that the kinds in question are *properties* seems to differentiate her view from that of Loux. Loux certainly thinks kinds are universals, but he thinks they belong to a type of universal fundamentally different from the type to which properties belong. Unlike property-universals, kind-universals provide for *what the object is* and are instantiated by the object, and are not entities had or possessed by objects. Loux's distinction clarifies an ambiguity in the notion of exemplification; kind-universals are exemplified by being instantiated, while property-universals are exemplified by being possessed. This distinction is somewhat blurred by Macdonald's terminology, though she does seem to want her account to retain the spirit of it.[189]

A perhaps more significant way in which Macdonald's PES differs from Loux's version of NRT is that it gives to substances what she calls an 'internal structure' in the sense that they are

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[187] Ibid, 116.
[188] Macdonald calls the lowest-level kinds "atomic substance-kind properties" (Ibid, note 47).

not only exemplifications of substance-kind properties, but are exemplifications of such properties *at times* and *in places*. These places and times, together with the relevant substance-kind properties are, on Macdonald's view, *constitutive* of substances and *essential* to them. She writes, "it is in the nature of any substance to be an exemplification of a substance-kind property in a place at a time."[190] This distinguishing feature of her view results in the following existence and identity conditions for substances:

> *Existence Condition*: Substance [x,P,t] exists if and only if the atomic substance-kind property P is exemplified in place x at time t.
>
> *Identity Condition*: Necessarily, substance [x,P,t] is identical with substance [y,Q,t'] if and only if place x is identical with place y, the atomic substance-kind property P is identical with the atomic substance-kind property Q, and the time t is identical with the time t.'[191]

In keeping with the spirit of NRT, however, Macdonald assures us that to say that places, times, and substance-kind properties are *constituents* of substances should not be construed as saying they are *parts* that go together to compose substances.[192] And this ensures that her account is non-reductionist in a way that neither BT nor ST is.

The addition of places and times is necessary, Macdonald thinks, in order to account for the individuation of individual substances. Loux claimed that individuation and numerical diversity are simply brute facts that accompany or (better) result from the instantiation of a kind. Noting,

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[189] Whether or not she is successful in this may be debated – see footnote 181 where Macdonald quite clearly says that substance-kind properties are entities *had* by things.

[190] Macdonald, 117. Because, as Macdonald believes, substances are continuants, strictly speaking we should say that it is in the nature of a substance that, at any time at which it exists, it exemplifies a substance-kind property in a place. And it must not be merely *a* substance-kind property, but *one and the same* substance-kind property that is exemplified throughout its entire spatio-temporal career. Macdonald does not discuss these complexities. In my discussion, I assume that they are built in to the account.

[191] Macdonald, 118.

[192] Rather, the relationships these constituents enter into are "simply very different from the relations that the parts of physical things bear to one another", and though the descriptions of substances formulated as [x,P,t] have

however, that substance-kind-properties are universals and hence are shared by each of their instances, Macdonald appeals to particular places and times, in addition to the kinds, to complete the individuative feat.[193] Without this addition, NRT would be unable to give any obvious reason why two instantiations of a kind are in fact two, rather than one. Oaklander & Rothstein (2000) raise a similar objection: "How," they ask, "can a universal, which is common in every object that exemplifies it, also provide for the numerical diversity among these same objects?"[194] Furthermore, they note, if kinds are to be capable of individuating objects (on their own), they cannot be basic, irreducibly unified entities (as Loux says they are), since they would need some non-universal element – something like our old friend the bare particular – to do the work the (common) universal element is incapable of doing. Giving each of the instantiations of a kind a unique time and place allows us to overcome this obstacle.[195]

It is not entirely clear whether or not Loux would be willing to agree with the claim that it is necessary that any exemplification of a substance-kind occur at some place and time. In another context he points out that nominalists sometimes argue that the idea of spatio-temporally located universals leads to absurdity since it allows for entities that are wholly and simultaneously present at different, non-overlapping places. This in turn would legitimize assertions like

        (1)   The color red is 15 miles away from itself

and

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constituent expressions, this "in no way shows that substances themselves 'contain' or are constituted by the entities referred to by the constituent expressions of such descriptions" (117-118).
[193] She writes, "The places in which and the times at which those properties are exemplified or instantiated uniquely individuate substances from one another" (116).
[194] Oaklander and Rothstein (2000), 101.
[195] See Macdonald (2005), note 44.

(2)   The shape of triangularity is both receding from and drawing
       closer to itself

both of which seem to be self-contradictory. Loux thinks the realist about universals can deal

with this objection by simply denying that universals are spatio-temporally located, and here he

cites Russell's point that relation-universals like *being north of* are not located in any of the

particulars related by them. On the other hand, he thinks that even if universals are spatio-

temporally located, this does not present a problem:

> [T]he apparent oddity of claims like (1) and (2) derives not from any
> metaphysical impossibility, but merely from the fact that since our
> discourse about spatial location is typically restricted to the case of
> particulars, we mistakenly suppose that the principles governing their
> occupation of space apply across the board.[196]

So it appears that Loux thinks the options to take universals as spatio-temporally located or to

refrain from doing so are both open to the realist, and he himself does not – as far as I can see –

explicitly pronounce on the issue.[197] There seems to be room, then, for him to agree with

Macdonald that exemplifications of substance-kinds necessarily take place at some spatio-

temporal location, but there are also reasons why he might not want to say this (and in his

explicit account he does say that exemplification of a substance-kind is *in itself* sufficient for

individuation).

   But whether or not Loux would agree with Macdonald in seeing the exemplifications of

substance-kinds as individuated by the places and times they occupy, this strategy will not work

as a way of escaping the objection Macdonald is trying to disarm. Consider what Macdonald

might mean by saying that necessarily, any substance [x,P,t] is an exemplification of atomic

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[196] Loux (2006), 49.

substance-kind property P in place x at time t. It seems that, where s is a substance, t and t' are place-times (for simplicity's sake I combine places and times into one variable-type), and E stands for "exemplifies a substance-kind at", there are two options for interpreting Macdonald's claim, the first being notably stronger than the second:

(a) $(\forall s) \; \square \; ((\exists t)(sEt) \wedge ((\forall t')((t' \neq t) \rightarrow \neg \; sEt')))$

         [*Any substance must exemplify its kind at (and only at) the place-time it actually exemplifies it at.*]

(b) $\square \; (\forall s)((\exists t)(sEt) \wedge ((\forall t')((t' \neq t) \rightarrow \neg \; sEt')))$

         [*Any substance must exemplify its kind at some unique place-time or other.*]

If we interpret Macdonald's claim as equivalent to (b), we find that the view is no help to NRT. It has already been established that kinds cannot individuate. So if kinds together with place-times are capable of individuating, it would have to be in virtue of the place-times. But treating places and times as individuators has been criticized extensively in the literature. Perhaps the strongest and most oft-repeated objection is that places or "parts of space" themselves can only be individuated by reference to the object(s) that occupy them. Lowe (1998) writes:

> the problem with this suggestion is that parts of space themselves…
> very arguably lack a principle of individuation. It won't do, here, to
> claim that parts of space can be identified with sets or aggregates of
> points and be individuated as such: for either points are just parts of
> space themselves – in which case the claim in question carries us no
> further forward – or else (as I prefer to think) points are *limits* of parts
> of space, in which case parts of space cannot be aggregates of them. It
> seems that parts of space, like parts of stuff, can only be individuated
> derivatively (thus, one could individuate a certain part of space as the
> part of space which is currently wholly occupied by a certain gold
> ring).[198]

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[197] Still, it would be hard to see how he could claim that objects like Socrates and Fido, which *just are* exemplifications of the kind-universals to which they belong, are spatio-temporally located.

[198] Lowe (1998), 201.

In order for places and times to be capable of individuating objects, they would themselves first have to be individuated and hence independent. Hoffman and Rosenkrantz, to whom Lowe refers in his own discussion of the problem, argue along similar lines that places and times are not independent entities. I won't go into the details here, but the general idea is that an independent being would have to be capable of existence on its own. But the nature of place and of time is such that there could not exist a single place or time (since the structure of place must allow for motion and the structure of time must allow for change, but these entail at least two places and at least two times). So places and times are not independent.[199] Needless to say, if places and times can't individuate, then appealing to them to explain how instances of shared substance kinds can be numerically diverse is not a very hopeful strategy.

But the other interpretation of Macdonald's claim, (a), not only faces the problem just raised against (b), but is also highly counter-intuitive, since (a) implies that, for any substance s, there is one and only one series of place-times at which s could possibly exist; in other words, throughout the course of s's existence, s could not have existed at any other place-times than the place-times at which s in fact existed. The interpretation given by (a) would rule out counterfactual claims like, "The anvil might not have landed on the coyote if the coyote had stayed at home instead of chasing the road-runner." Neither the coyote nor the anvil could have been anywhere but where they in fact ended up. Generally, then, (a) would entail that determinism (or at least something practically equivalent to it) is true. And while determinism might be true, it seems best to avoid building it in to one's existence criterion for objects. So either Macdonald's view is the relatively harmless one (which Loux may be open to accepting) that exemplifications

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[199] I refer the interested reader to the discussion in their (1997), pp. 55-60.

of substance-kinds are always exemplified at a unique time and place, in which case building this in to NRT moves it no closer to being able to account for the individuation and numerical diversity of objects, or it is a view that adds to this deficiency the highly controversial entailment that it is necessary, for every substance, that it exist at precisely the series of place-times at which it exists. Either way, it does not seem that Macdonald's version of NRT improves on Loux's.

3.3.3 Further Objections to NRT

It is tempting to conclude that some version of NRT *must* be correct, since, as we have seen, even the best reductionist theories of objects are seriously problematic. I argued that the disjunctive syllogism BT $\vee$ ST; $\neg$ BT; $\therefore$ ST fails because the reductionist options do not exhaust the options for an ontological account of objects. Now, however, we might attempt a similar argument in favour of NRT: BT $\vee$ ST $\vee$ NRT; $\neg$ (BT $\vee$ ST); $\therefore$ NRT. Indeed, proponents of NRT do argue this way; this is certainly true in the case of Loux and Macdonald, each of whom presents the non-reductionist account as the remaining alternative after the reductionist options have been systematically disposed of.

But we need to ask whether the trichotomy of positions outlined is in fact exhaustive. And without having to look too far, we find that it might well not be. Loux himself notes that one might follow Aristotle in adopting a form of essentialism without also accepting his views on the nature and role of natural kinds. Though some have placed Leibniz in the Bundle Theory with Tropes category, he could arguably equally well be seen as a Non-Reductionist, yet since he gives his objects individual essences, he seems to have a position that is quite distinctive. Furthermore,

van Inwagen (1990) has outlined a theory of concrete particulars which seems to be consistent with Aristotelian essentialism but which does not take objects to be unanalysable. Finally, Wiggins' account, though related to that given by Loux, is not clearly non-reductionist in the same way. He explains the fact that an object is an instantiation of a kind by appeal to nomological foundations in nature, and so he seems to be giving a kind of reductive account insofar as the essences of objects supervene on the law-like principles that govern their existence and development, and these in turn on the more general laws of nature.[200] Given some measure of imagination, then, the fact that BT and ST are seriously problematic cannot be a decisive reason to adopt any particular version of NRT. Of course, it is far from clear that any of the alternatives I have mentioned are any less problematic than their main competitors.[201]

Furthermore, a proponent of one of the reductionist options might protest that in spite of the fact that the versions of that approach examined here have been shown to be flawed, a more satisfactory version might be forthcoming. And, certainly, he might add, one does not want to return to the outdated mode of theorizing about substances as ontological primitives. As Simons has written,

> The concept *substance* served well enough as long as our knowledge was
> confined to what we could perceive through the unaided senses and
> infer from those data. It retains a role as a high-level concept in

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[200] It is not entirely clear whether such an explanation is reductive. It would still be open to Wiggins (or to Loux, if he were to agree with it) to say that the kind is what somehow generates the regularities, and that this takes place *via* the (ontologically primitive fact of the) instantiation of the kind to which the object belongs. The fact that Wiggins is primarily concerned with individuation in the epistemic sense, rather than in the metaphysical sense, hides to some extent the precise ontological import of his doctrine.

[201] This is a point that plays an important role in setting up the tension whose resolution will be the subject of the next chapter, namely, the tension between the apparent problematic nature of all proposed ontological assays of objects and the *prima facie* conceptual necessity of objects. Strictly speaking, I must admit that I do not give a completely exhaustive treatment of every style of assay. Nevertheless, the others I have mentioned have flaws that have been noted in the literature, and I am content to take the project of chapter four as founded only on the hypothetical failure of all assays of objects rather than their demonstratively proven failure.

> commonsense knowledge and such disciplines as cognitive science and
> natural language analysis and processing which remain at this level. As a
> fundamental metaphysical primitive, it belongs, like the horse and cart,
> to a bygone age.[202]

And even if all the alternatives had been examined and discarded, it would still remain that NRT

faces significant problems of its own. I now turn to two further objections to NRT which I take

to be fairly decisive against it.

3.3.3.1 Uninformativeness

In seeking an ontological assay or account of the ontological structure of objects, we are looking

for answers to certain questions. We are asking the general question, "What is it, ontologically

speaking, to be an object?" And we are asking several specific questions guided by the intuitive

desiderata we feel any theory of objects should meet. For instance,

     i.   *Individuation*: What it is that makes a given object to be individual (metaphysically individuated) and numerically distinct from others of its kind?

     ii.   *Unity*: What causes an object to possess intrinsic unity, to have its various parts and / or features combined into a single thing?

     iii.   *Identity*: What bestows on an object the determinate identity it possesses; what makes it to be the very object it is (and no other)?

     iv.   *Change*: What is it that enables an object to persist through change?

     v.   *Modality*: What accounts for the fact that some features of objects seem to be essential, while others seem to be accidental?

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[202] Simons (1999), 38.

But instead of giving satisfactory answers to these questions, NRT bypasses them. NRT's reply to the general, definitional question is that to be an object is to be an instance or exemplification of a(n atomic) substance-kind (or kind-property) – something that exhibits the form of being that is the kind in question. But the question we then want to have answered, in order to get some intellectual purchase on the topic, is one that could be formulated in the following ways: "What is it to be an instance of a given substance-kind?"; "What is it to exemplify an atomic substance-kind property?"; "What is it that makes kinds prior to their members (unlike the members of sets) and capable of bestowing on them all the rich ontological features being attributed here?" But in effect all NRT's answer tells us is that an object *just is* a non-universal version of certain privileged universals, period. There are two particular cats because the universal 'Cat' is instantiated twice, and that's all there is to say about it. But we should feel that the universals postulated to explain the particulars are now themselves in need of some ontological assay, an assay which typically is never given.[203] This kind of answer is a singularly uninformative one.

NRT says that the way to answer the specific questions (i)-(v) above is by appealing to the fact that objects are instances of their kinds in the way described in the reply to the general question.[204] Consider the individuation criterion (i). It is supposedly in virtue of the fact that they are instances of irreducibly basic kinds that objects are numerically distinct individuals. Recall Loux's claim that,

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[203] Could not Wiggins reply that the story about laws of nature is what provides the desired further account of what universals are? It seems possible – though by no means certain – that he could. But if so, it appears that he would no longer be giving a non-reductive account.

[204] To account for the cases of change (iv) and modality (v), NRT needs to add that there are also accidental properties associated with the instances of the kinds. This point may also cause some complexity in the answer to

the multiple instantiation of a kind is, by itself, sufficient to secure the existence of numerically distinct particulars. Each of its instantiations is a particular that is numerically different from each of the others…. [K]inds, unlike properties [construed as characterizing universals], are such that their multiple instantiation results in numerically different particulars…. Their shared kind… diversifies the two objects, so even though they share all their additional attributes [in the case of qualitatively identical particulars], all their properties, they remain numerically distinct.[205]

Stating that a kind has been instantiated, according to NRT, is supposed to be explanatorily sufficient to answer the individuation question. But we ought to ask, "How does the mechanism of instantiation work?" In the case of individuation, "How does instantiation generate individuality and numerical diversity?" But the only answer that seems to be on offer at this point is the metaphorical description of the relevant substance-kinds as "ontological cookie cutters". Because of the "activity" of kinds in "cutting up the world" we are given various "principles for identifying, distinguishing, and counting objects."[206]

The metaphor is fine and good, but one wonders how far we are to take it, and indeed what content we are to draw from it at all. Surely the force of the metaphor is the idea that a pattern can be impressed by one kind of thing (the kind-universals) onto things of a distinct kind (particulars) in some way analogous to the way a shape is impressed into cookie dough by a cookie cutter. But various significant disanalogies appear as soon as we begin to probe. If there really are mind-independent kinds distinct from their instances, they would have to inhabit some extra layer of reality since they are abstract. Does the non-reductionist theorist really want to say

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the unity (ii) question; kind-instantiation explains the unity of the essential features, but what joins the accidental features to the essential core given by such instantiation? More on this in the next objection.
[205] Loux (1998), 113.
[206] Ibid.

this? If so, we will want to know how a kind-universal, being ontologically a fundamentally different entity from the particulars that are its members, interact causally with them.

Furthermore, it is unlikely that the non-reductionist would admit that there is in reality anything corresponding to the 'dough' that exists before being 'cut up' by the kinds and is somehow caused or made by them to take on various features. The best candidate for ontological dough would be some kind of matter, but unless we are dealing with something like Aristotelian prime matter we are not likely to find anything that comes completely uncharacterized and ready to be informed by whatever kinds come to inform it. And Aristotelian prime matter has problems of its own, such that few ontologists would be likely to choose it. Moreover, only on a very extraordinary (or naïve) view of physical reality could we agree that any causal process analogous to cookie-cutting actually takes place between kinds and their instances. I do not need to rehearse the standard objections to Platonic participation here. Suffice it to say that unless the causative machinery at work in making instances from kinds is displayed in such a way as to provide answers to such legitimate ontological questions as those raised above, we should feel deeply unsatisfied by such accounts and their associated metaphors. For these seem to be just the questions motivating the whole project of giving an account of the nature of objects in the first place. But on NRT, these questions are insulated from serious enquiry by the claim that instantiation is an ontologically fundamental, unanalyzably primitive fact.

L.A. Paul (2006) raises a related objection in the context of an argument against the view she calls substance essentialism.[207] Specifically, she is concerned with the non-reductive substance essentialist's claim that "the world is such that objects have primitive essential and accidental properties (or simply fall under sorts, or have certain forms)." This view, she says, is inferior when compared with various available reductive theories of *de re* modal properties – those, for instance, that see such properties as determined by the relations of the object to its counterparts in various possible worlds. And, she argues, the substance essentialist who appeals to some further primitive entity, such as the form of the object, to account for its sort will still be guilty of unacceptable primitivism unless he can give "a reductive account of how an object's form determines its sort and a reductive account of how an object's *de re* modal properties are determined."[208]

To the kind of objections I have been raising, the defender of NRT might respond along the following lines. Granted, the explanations of the phenomena we are concerned with as resulting immediately from the unanalyzably primitive fact of kind-exemplification may feel unsatisfying. But two things can be said about this. First, the explanations given take the ontological account at least one step deeper than those offered by a position such as austere nominalism, so that NRT is less quick to appeal to primitives than some alternative theories. And second, since the dialectical pressures lead us to postulate kind-universals and exemplification as ontological primitives, and since doing so leads to the overall most coherent view, why shouldn't we help ourselves to them? After all, every ontology must postulate primitives at some level. And as we

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[207] Specifically, substance essentialism is, according to Paul, "the view that (a) objects are substances that fall under sortals and (b) we need no further ontological explanation of how objects have their *de re* modal properties" (335).
[208] Paul (2006), 340.

saw in the case of substratum theory, the seriousness of the charge that certain aspects of a theory are somewhat *ad hoc* depends on the relative overall cost-benefit analysis of that theory. The elegance and explanatory simplicity afforded by accepting kind- and property-universals outweighs, the defender of NRT might argue, any sense of obscurity or dissatisfaction we might feel about the way the theory treats certain questions we desire answers to.

The non-reductionist theorist might urge, further, that it is quite possible that the felt need for deeper answers is misguided in the first place. What grounds do we have for our expectation, for instance, that the story of how an object is individuated – how it becomes a numerically distinct instance – must be given at some deeper ontological level? After all, it is not clear that any other theory on offer fairs any better on this count. Trope Bundle Theory solves the problem by simply positing that basic tropes, as a matter of primitive fact, come individuated – and the fact that it is tropes rather than objects that are the primitively individuated units does not obviously take us significantly further than NRT. The Bare Particularist version of ST offers the addition, to a realist view of properties, of a non-property individuator. But as soon as it is asked what makes the bare particular itself to be individuated or to be the source of individuation for the properties tied to it, the answer will be that these are unanalyzable metaphysical facts.

The problem with this kind of response, it seems to me, is that at the level of macro-level objects like fish and perhaps benches, the appeal to primitivism feels a lot more like sleight of hand than it does in the case of, for instance, basic tropes. Just as we are more inclined to accept that quantum-level entities have bizarre properties (e.g. capable of being in more than one place at a time) relative to the macro-level objects that are composed of them, so we might be more

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inclined to countenance the possibility that entities as remote from experience as basic tropes or bare particulars could be primitive, though such a claim about macro-level objects seems harder to swallow.[209]

Maybe this feeling is nothing more than an effect of our tendency to want to give an account of all physical objects in terms of their constituent parts and the laws that govern them. Robb's idea of structural properties – properties that are structured on the properties of lower-level substantial parts – gives us a very natural way of understanding the properties of macro-level objects. The rationality of a particular man (a good candidate for an essential macro-level property), we tend to think, arises at least in part from the way the man's nervous system and various cognitive capacities are set up, which in turn are the result of the properties of lower-level organic structures such as brain cells and neurotransmitters. The further down we go, the more unusual the entities we are dealing with become, and the more believable it becomes that we are dealing with ontologically primitive entities. To say that the trope-bundle that is a quark is composed of unanalyzable, irreducibly numerically distinct individuals, from which individuality and numerical distinctness is then transmitted to the bundles and eventually to the bundle of bundles of bundles (etc.) that is our familiar macroscopic object, seems to be better suited to a scientific perspective than the idea that the whole package is just stamped into existence as a numerically distinct individual.[210] If this kind of explanation can be given, however, then only if NRT outweighs the reductionist options in very significant ways should we prefer it over them.

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[209] Of course the Non-Reductionist might argue that the analogy between what happens with the atomic theory of matter and what we ought to think is taking place

[210] Note that a similar 'deeper' explanation of the individuality and numerical identity of macro-level objects is available on substratum theory so long as Moreland's insight that bare particulars may only be the *ultimate*

Does NRT outweigh the other options? Besides the outstanding objections to the reductionist theories, the only clear advantage NRT has over trope BT or ST-with-tropes is that its realism about universals gives a slightly more elegant account of attribute-agreement and abstract reference, and related phenomena (on this count substratum theory with universals would score the same as NRT). If, however, as Armstrong has admitted, trope theories of properties, using equivalence classes, do almost as well as realist theories at accounting for these phenomena, then the primary remaining issue seems to be whether it is a category mistake to see tropes, and bare particulars, as *parts* of objects. And while this seems to hold against naïve views of BT or ST, it is not entirely clear that it holds in the case of the more sophisticated views.

3.3.3.2 Threat of Incoherence / Hypocrisy

I now return to the issue, canvassed earlier (footnote 204), that NRT, in order to provide a complete answer to change and modality questions (and quite likely to the unity question as well), must say that there are accidental properties associated with the essences that are the instances of kind-universals. One of the main motivations behind NRT seems to be the desire to do justice to the idea that properties require a subject or possessor without having to resort to the incoherent notion of a propertyless substratum. On NRT, it is the concrete particular *itself* which is the subject of all the properties we attribute to it, but we don't want to say that these properties are components or parts of it in any sense, since this would lead us back into reductionism. At the same time, advocates of NRT want a theory which does at least as well as

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individuators (e.g., the individuators of, say, quarks), so that higher-level particulars are individuated not by bare particulars *of their own*, but by the lower-level objects that *are* individuated by bare particulars.

the best versions of BT or ST at dealing with the distinction between essential and accidental properties. An object, the non-reductionist tells us, consists of "a core being or essence furnished by a kind and a host of properties that lie at the periphery of that core and, hence, are accidental to concrete particulars."[211] Thus, objects have a certain ontological structure in spite of their irreducibility, and are capable of accounting for persistence through change and modal facts about them, since change is simply the exchange of one accidental property for another, and since objects have essential cores as well as properties they can exist without.

Difficulties arise, however, when we reflect on the fact that all the members of a given substance-kind will share the same essence – essences are general, we are told. If so, then what is it that distinguishes them? As we saw earlier, Macdonald's attempt to solve this problem by appeal to essential place-times cannot help. One of the problems with the substratum was its inability to act as an individuator for the object of which it is a constituent in virtue of the fact that any truly bare particular would be indiscernible from any other truly bare particular. But, the same problem now seems to arise for the substance theorist.

A further, related issue is that, given that the core being or essence given by the kind is really distinct from the accidental properties associated with it, we now have to ask how the two are related. And we must have it that they are related in such a way that neither the accidental properties nor the essence of the total object are *components* of it (on pain of committing the same category mistake the reductionist views were accused of making). But how do we spell this out? And if we find a way of describing the tie that brings together the essence with its characterizing

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[211] Loux (2006), 113.

properties in a way that does not commit the part-whole category mistake leveled against reductionism, why can't we make that description available to the reductionist as well?

The root problem in both of these cases is that NRT charges reductionist views with the inability to resolve certain problems, while at the same time neglecting to answer the same charge as applied to itself. The problems of the individuation of the essences *qua* instances of kind-universals and of the relation between these and their characterizing properties remain as outstanding debts to be paid by any advocate of NRT. The Non-Reductionist account of objects, which seemed (to some) to be the last standing outpost for the ontologist seeking to describe the nature of objects, must be placed on the shelf beside the two forms of reductionist accounts.

3.3.4 Conclusion of Chapter Three

Both bundle theories and substratum theories of objects are seriously flawed. This conclusion is not particularly surprising. What is more surprising are the facts that there are subtle and powerful versions of both views on the contemporary scene in Ontology, and that even the most subtle versions remain seriously flawed in spite of the improvements they make over their more naïve predecessors. Non-Reductionist Theory is also seriously flawed. Again, this fact may not come as much of a surprise to many philosophers. Whether any version of either reductionist or non-reductionist ontological theories of objects will be rehabilitated to the point of offering a sufficiently problem-free and useful account remains to be seen. The following

chapter rests on the assumption that such accounts are not likely to be forthcoming, and asks the question of what the ontologist is to do if this assumption is true.

In the absence of any satisfactory ontological assay of objects, I think we should ask two questions. Firstly, we should ask whether there is a more endemic or systematic problem involved here than the particular problems with the distinct styles of assay. Perhaps the difficulty of providing an adequate ontological assay of objects is due to the fact that the notion of an object is too general; perhaps some kinds of object can be captured by a given assay even if others cannot. Certain of the objections I have raised against particular assays seem to bear this out. For instance, I argued that the Supplemented Nuclear Trope Bundle theory collapses into a version of ST when simple entities are being considered. It might be the case that ST gives the correct account of simple entities, while some suitably sophisticated version of BT can account for all the complex ones. Secondly, we should ask (especially if the answer to the previous question is affirmative) whether some other, perhaps ontologically thinner notion(s) is (are) capable of meeting the conceptual demands imposed by the various explanatory and other practices we engage in which seem to make the notion of an object indispensible to us. This will, I think, require some reconsideration of the role of the ontological distinctions that were drawn in Chapter Two.

In the following chapter, I will bring the arguments of Chapters Two and Three together with the goal of offering a resolution to a conflict that has been shaping up. The conflict I have in mind is between the *prima facie* case for the indispensability of objects (in the philosophically important sense isolated in Chapter Two) – a case that I will build more support for in the first

section of Chapter Four than I have done so far – and the problems that we are led into by too strict an adherence to that notion – problems which are demonstrated by the misguided approaches to the two debates in Ontology we have now discussed (the debate over the existence of ordinary objects in 2.2, and the debate over the correct ontological assay of objects in Chapter Three). I will argue that the ontological distinctions employed in characterizing the notions of an individual, a particular, and an object in Chapter Two can be woven together to form a kind of ontological framework in which a plurality concepts of ontologically significant individuals can be situated. By replacing the notion of an IICP with this plurality of individual-concepts, I will also argue, we can make progress in both of the debates where, as we have seen, seemingly unresolvable problems have arisen. It will turn out, then, that a place can be secured for the general ontological theory of individuals, even if there is no place for such a theory of objects, at least not in the sense of that notion we have so far been working with.

3.4 Appendix to Chapter Three: Reflections on Individuation

This section is not a direct part of the main argument, and the reader wanting to keep the flow of the whole thesis in mind is advised to skip over it and then return at the end if he or she so desires. I include it mainly for the sake of developing a bit further some of the thoughts raised in the last section of the previous chapter.

It would be interesting to know whether there is any common or systematic reason at the root of the failure of the ontological accounts that have been examined. Why, in general, ought we to

think it is unlikely that such a project will ever succeed? We would have a stronger case if we did not have to base such a claim merely on the fact that no theory has been successful yet, or by pointing out isolated and particular flaws in the individual theories. One issue that does seem to be fairly central to the problems of all the competing theories is the issue of explaining individuation. How is it, the question goes, that individuals come to be numerically distinct or individuated? The rationale behind the question seems to spring largely from considerations having to do with realism about universals – we notice the phenomenon of attribute agreement (the shareability of properties) which seems to hold for nearly any characterizing or kind property we can imagine.[212] We notice, for instance, that both Socrates and Plato are (essentially) human beings. So we ask what makes the two occurrences of the kind 'human being' numerically distinct? Furthermore, for any feature that seems to set Socrates apart from Plato, there is no difficulty in imagining that some other individual shares F with Socrates. In fact, it seems imaginable that there could be an individual qualitatively indiscernible from Socrates. But in such a case, what could make it true that we nevertheless have two distinct individuals and not one?

Clearly, as we have seen earlier, Bundle Theory with universals cannot say anything about this. Substratum Theory's postulation of bare particulars seems, at first, to provide the answer, since it offers a non-property, non-universal item whose fundamental role is to individuate. But this approach fares no better in the end because of the incoherence of the concept being employed – the concept of an entity with no internal nature whatsoever that is nevertheless capable of doing the metaphysical work of individuating collections of universals. BT with tropes takes

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[212] There are a few exceptions, such as the property of being-identical-with-Socrates. But whether or not such

individuation of tropes as a primitive ontological fact, and derives the individuation of objects, seen as trope-bundles, from that of their constituents. The problem here is that when the question is pressed as to what individuates trope BT's preferred ontologically fundamental entities, the game is given up. They *just are* numerically distinct, and that's all there is to say about it. Furthermore, at the ontological ground floor – the level of the basic tropes – the properties or natures become very object-like, and the threat arises of the need to build in a substratum for them. This, of course, the trope theorist must deny, yet the only way of doing so is by stipulating that, contrary to our intuitive understanding of properties, basic tropes just are individuated and numerically distinct from one another.

Non-Reductionist Theory, as expressed in Lowe's version, seems to offer a nice compromise, stating that the substrata of objects are just the objects themselves, so that what makes an individual to be individuated is not some component of it, but just the individual itself.[213] This kind of account seems to avoid the appeal to incoherent property-less bare particulars while not having to claim that properties are capable of doing the work of objects (as in trope BT). Yet the only way to effect the claim that fully-fledged (thick) particulars or individual objects themselves are the true individuators is to postulate primitive individuation on behalf of those objects – or at least individuation at most a small step from primitivity. Individuation is accounted for (when explanations are given for it by NRT advocates) by appeal to the mysterious process of instantiation, in which numerically distinct instances of substance-kinds are stamped into existence. But as the instantiation mechanism usually goes unexplained, NRT also seems to give up the game in regard to the question of individuation, albeit in a slightly less immediate (more

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properties are genuine is questionable.

disguised) fashion than the way Trope Bundle Theory gives it up. So none of the theories of objects we have considered succeeds in telling us why individuals are individuated and thus numerically distinct units.

But is this really a problem? After all, the three theories actually *agree*, when it comes down to it, that individuation is an ontologically primitive fact (even if NRT is in denial about this). They differ only in respect of where that primitive fact shows up within the context provided by the other aspects of their theories. Might it not be, then, that the question, "What makes individuals to be individuated?" is just misconceived in the first place, and that we should take it as unsurprising and unproblematic that the true individuals (whether they turn out to be bare or thick particulars, or tropes) are just brutely individuated? Given constraints of space, I must leave this as an open question, at least for now.

The main point of this chapter has been that each of the three main attempts to provide ontological accounts of objects is flawed. The implications of this, and what response we might take in light of them, will be considered in greater detail in the following chapter.

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[213] Martin's version of ST approaches this, in a certain way.

Chapter 4

A Family-Resemblance Account of Individuals

This chapter has two primary objectives. The first section (4.1) picks up on a claim the justification of which I briefly outlined in the introductory chapter – namely that, at least *prima facie*, the concept of an object – of an intrinsically unified, independent concrete particular – is indispensible to us. I lay out some motivating reasons supporting this claim in greater detail by showing how various theoretical and practical concerns of ours seem to demand the availability of something answering to the category of objects. However, the results of the second section of Chapter Two and of the entirety of Chapter Three have already shown two areas in which the notion of an object tends to lead to confusion. So a tension emerges between the *prima facie* necessity of the notion and the reasons we have found for thinking that this notion either is itself problematic or at least tends to cause problems for other issues in Ontology.

Section 4.2, then, will present my general strategy for resolving the apparent conflict. The strategy I propose begins by noting that there is greater flexibility than at first appeared in the schema of ontological distinctions canvassed in Chapter Two. Once this flexibility becomes apparent, the possibility arises of identifying distinct but related concepts, one for each of the main sub-categories of individual to which our purposes require us to appeal. The "pluralistic" ontological framework that results when the relationship between the ontological distinctions is clarified provides a way of situating and relating the distinct types of individuals that both avoids the confusions that the single general concept of an object leads to, and is capable of indicating

the varying degrees of "ontological robustness" or "object-like-ness" of any given type of individual.

Given the restrictions I must place on this project to render it manageable, I limit myself to explicating (in section 4.3), at least in broad strokes, three such "individual-concepts" – one that applies to inanimate physical bodies, another to living organisms, and a third to persons. At the same time, I take myself to be illustrating a general approach that will also be capable of situating and relating concepts denoting other kinds of entities that belong to the individual-family, such as artifacts, certain kinds of groups (e.g. flocks of birds, schools of fish, etc.), and perhaps a variety of other kinds as well.

4.1 The *Prima Facie* Necessity of the Concept of an Object

Why ought we to think it unlikely that we will be able to do ontology without the concept of an object? We seem to be driven to appeal to objects by various practical and theoretical concerns. In the present section I will discuss the *prima facie* indispensability of the concept of an object in sustaining three distinct practices: (i) the practice of generating causal explanations involving physical bodies; (ii) the practice of generating biological explanations involving organisms; and (iii) the practices of rational deliberation and of attributing moral responsibility, which involve persons. The list of objects mentioned in (i)-(iii) could certainly be added to; there are also many more practices requiring us to appeal to objects besides the ones I will be considering. But the sample I provide here should suffice to make the case. The task of section 4.3 will be to provide precise specifications of the concepts applicable to the types of individual needed to sustain

these practices. It will turn out that objects are not, strictly speaking, indispensible, but that there is a way of preserving the intuitions that lead us to think they are, within the ontological framework I develop.

4.1.1 Physical Explanations

What we ordinarily consider to be objects are unified centres or *loci* of capacities and dispositions of various sorts. In everyday life and in science, we employ a vast number of causal explanations that follow the pattern of citing the presence and/or activity of some object(s) as the cause of some observed effect or behaviour. Consider the following questions and explanations:

Q: Why is the window broken?

E: Because a *baseball* was thrown through the glass some time ago.

Q: Why is this man choking?

E: Because there is *a baby octopus* stuck in his esophagus.

Q: Why is this person displaying various symptoms of illness?

E: Because of the presence of *bacteria* of a certain kind in her lungs (and because of what these bacteria are doing to her lungs – their *activities* in which they are exercising their *capacities*).

Q: Why has the population of rabbits decreased in this region in the last month?

E: Because a number of *foxes* moved into the region a month ago (and, again, because of the activities of the foxes).

Q: Why was the rate of ammonia synthesis dramatically increased?

E: Because of the presence of *iron crystals*, which served as
        a catalyst for this process.[214]

Explanation by appeal to objects (and their properties, activities, and relations) seems to be an endemic and completely acceptable way of proceeding in these and a vast variety of other cases.

An initial general point we might notice is that all such explanations seem to presuppose the fact that we have the capacity to successfully individuate objects – to single them out from the rest of reality and to track them through time. So our explanatory practices seem to depend on the availability of this further, perhaps more basic, capacity. To render this thought intelligible, we naturally appeal to the existence of objects; if there were, in fact, no objects, we would be at a loss to explain what we are actually doing when we track, for instance, an apple across time and space and judge that it is the same apple as one we experienced at an earlier time. Since I am officially neutral on whether objects are seen as substrata-involving or as bundles of tropes (or neither), it would be no answer to say that what we are doing is singling out and tracking some bunch of bundled properties, for even bundle theorists must distinguish between bundles and the individual properties that compose the bundles.[215] In a Strawsonian-Kantian spirit we might say, more generally, that we need objects, conceived as enduring particulars, to unify our spatio-temporal framework and enable us to locate ourselves within it. But my task in this section will not be so grand; rather than developing this general point, I will focus on the apparent conceptual demands for objects presented by some specific explanatory patterns.

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[214] I include this example to hint toward a case in which the presence of an entity alone, without its having to *act*, may be sufficient to bring about some effect that needs explaining. Of course, since there are intermediate reactions involving the iron itself, it might be denied that the example I have provided here is actually a case of the type I am trying to describe. Take a somewhat simpler case: the mere presence of a sheep dog on the hill, without the dog having to act at all (it is just sitting still – not even breathing) is sufficient to cause the sheep to run into the pen.
[215] An independent foundation system of tropes is clearly itself something distinct from a trope.

The first sort of explanation I will consider is the sort that appeals to physical bodies to provide adequate causes of certain effects. Within Physics, there are, of course, very significant differences that have to be considered when dealing with the bodies of Classical, Newtonian Mechanics, or with the particles of Quantum Mechanics. Indeed, on some interpretations of Quantum Mechanics, the fundamental entities turn out to be strikingly non-object-like. I must put aside any ambitions to offer a serious discussion of quantum physics, or even classical physics, here. Instead, I will be considering the "folk" conception of compound physical objects, which is employed in ordinary causal talk, and which presumes some microphysical basis for the causal properties of such objects without requiring that the details be specified.

To the objection that talk of physical bodies on other levels has been or eventually will be completely replaced by descriptions of quantum level events, I reply that some contemporary philosophers of physics have provided good reasons to doubt the force of this kind of claim. Nancy Cartwright, for instance, argues that it is far from true that quantum physics has replaced classical physics. Instead, she says,

> We use both; which of the two we choose from one occasion to
> another depends on the kinds of problems we are trying to solve and
> the kinds of techniques we are master of…. quantum physics works in
> only very specific kinds of situations that fit the very restricted set of
> models it can provide; and it has never performed at all well where
> classical physics works best.[216]

Moreover, she thinks it is misguided to continue to hope that one day all this will change; "nature," she argues, "is governed in different domains by different systems of laws not

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[216] Cartwright (1999), 2.

necessarily related to each other in any systematic or uniform way; by a patchwork of laws."[217] A similar line of reasoning can be run for our folk conception of physical bodies – a conception roughly equivalent to the modified mereological compounds I suggested as a more palatable alternative to Hoffman and Rosenkrantz's mereological compounds in 2.2. But since I am only here making use of the explanatory patterns we do in fact engage in without requiring that such patterns be ultimately correct, I will not delve any more deeply into these issues. Instead, I will simply assume that the concept of a physical body remains a useful target of investigation. But such bodies are compound objects, composed of other physical entities which are their parts, so it seems as though we are in need, in order to justify including them in our ontology alongside the physical particles (or other entities) that ultimately compose them, some way of saying how they can be something over and above those particles.

Metaphysical Nihilism – which denies the existence of compound physical objects on the grounds that, strictly speaking, only the submicroscopic entities of theoretical physics exist[218] – claims that ordinary objects are causally redundant. Take, for instance, the case of a depression that is formed in the earth as a result (as a believer in physical bodies would put it) of a heavy rock falling towards the earth and striking it.[219] The Metaphysical Nihilist will argue that nothing over and above the composing particles is needed to account for the effect attributed to the purportedly existing rock.[220]

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[217] Ibid, 31. She continues, "most situations are brought under a law of physics only by distortion, whereas they can often be described fairly correctly by concepts from more phenomenological laws."

[218] Lowe (2005) calls these 'atoms', using that term "as a place-holder for whatever kind or kinds of entities an ideal or completed physics would postulate as the 'ultimate' constituents" (p. 511). Since this view entails that we do not exist, Lowe notes, authors adopting a view like this have usually "tried to make an exception for our bodies, which they typically identify with ourselves" (512).

[219] The example is Lowe's, from his (2005), 525.

[220] An argument of this sort is found in Trenton Merricks' (2001) *Objects and Persons*, pp. 2-8.

Lowe (2005), however, points out that it would be incorrect to say that the granite particles alone caused the depression in the earth, since if the same granite particles were collected in a bag (after the rock had been pulverized) and poured out toward the earth, surely they would not result in the same effect. So we have to say instead that the granite particles, being arranged and interacting with one another in a certain complex way, were 'collectively' responsible for generating the depression in the earth. However, when we spell out what this way of being arranged and interacting is, we inevitably have to say that it is the way granite particles would interact and be arranged if they composed a rock – in short, the granite particles must be 'arranged *rock-wise*' to cause the kind of effect we are considering.

To avoid making the full circle back to the claim that the depression was caused by the individual rock itself, the nihilist has to say that the referent of the noun-phrase 'the granite particles arranged rock-wise' is *plural*. If so, however, it seems that the referent would have to be just the granite particles themselves. For if we say instead that it is the granite particles united by coherence into a package of the sort they would form if they were to compose an individual rock, then we are back to a singular referent. But unless we say this, it seems, we will not have anything capable of causing the relevant effect. So, according to Lowe, the nihilist "has left us with the mere appearance of an alternative story about how the depression was caused."[221] For

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[221] Lowe (2005), 529. Furthermore, the nihilist's appeal to collective causation seems problematic. Lowe explains, *"Sometimes*, granite particles 'arranged rock-wise' interact causally with… other things just as a pile of granite particles would – for instance, when we weigh them. And in these cases it is perfectly clear how causation by the particles as a group is nothing over and above causation by each of the particles. But in other cases, as when granite particles 'arranged rock-wise' cause a depression in the ground, it is very far from clear that causation by 'the granite particles arranged rock-wise' is nothing over and above causation by each of the granite particles. I conclude that the sceptic has simply been indulging in hand-waving… The phrase 'acting in concert' is just camouflage for the sceptic's lack of any account of collective causation adequate for his purposes" (531).

the kinds of causal explanations exemplified by the story of the rock and the depression, then, it seems that we cannot do without physical bodies, seen as objects in their own right.

In the same article, Lowe discusses another point that offers additional reason for appealing to physical bodies within ontology. There are good reasons, he argues, for thinking there are spatially overlapping objects, such as a statue and the lump of clay composing it. *Universalism*, a position diametrically opposed to Metaphysical Nihilism, holds that whenever two or more things are found, there is, in addition to these, a third thing they compose – namely, their mereological sum.[222] This view requires that the statue and the lump be identical, since each is identical with a sum of atoms. But the flaw of Universalism is that it makes use of only one principle of composition – the mereological summation of coexisting atoms. We do more justice to the way things are, Lowe argues, by deploying a variety of such principles, each of which relates to the distinct criteria of identity and persistence that apply to different kinds of objects.[223] Just as there are different criteria of identity and of persistence for objects of different kinds, so there are different principles of composition for the different kinds.[224]

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[222] Lowe (2005), 513. Mereological *sums* are not to be confused with mereological *compounds*, whose parts have to be joined and connected in dynamic equilibrium along the lines spelled out in Hoffman and Rosenkrantz's account discussed earlier.

[223] Four-dimensionalist Universalism is distinct from the related 3-D view described here in that it views "the ultimate parts of all composite objects… *not* [as] persisting entities of any kind but, rather, momentary temporal 'stages' or 'slices.'" But 4-D Universalism does seem capable of accommodating the distinction between a lump of bronze and the bronze statue spatially coinciding with it, because it sees the statue not as a simple sum of atoms, "but with a sum of atomic 'slices' selected from different atoms at different times." The assumption that there are such things as 'atomic slices' to be summed is, however, according to Lowe, both yields an extremely unparsimonious ontology, and seems to be "entirely gratuitous" as it is so far unsupported by any empirical scientific results (518-19).

[224] Lowe (2005), 517. Tentative specific composition conditions offered by Lowe for lumps of bronze and statues, respectively, are as follows:

> Some bronze particles compose a *lump of bronze* at time *t* just in case (1) all of those particles cohere together [are held together by "intermolecular electrostatic forces that modern physics and chemistry have discovered to underlie the solid state of matter and whose presence is empirically detectable by the resistance of matter in that form to separation or penetration"]

It becomes evident, Lowe thinks, that the lump and the statue are distinct, in spite of their being composed of precisely the same particles in precisely the same arrangement at any moment at which they overlap, when we see the two objects *diachronically* rather than *synchronically*. Tracing the particles involved over time allows us to notice, on the one hand, the changing constituency of the persisting configuration of particles (the statue) and, on the other hand, the cohering together of the same particles over a period time which persists in spite of alterations to their configuration (the lump).[225]

The same point can be put in a slightly different way that is more conducive to the argument of this section. To make sense of our experience, in certain salient cases, we need to postulate various kinds of physical objects possessing distinct identity and persistence conditions which thus require distinct principles of composition, even though they are capable of spatially overlapping. Lowe's defense of the objects of commonsense ontology is relevant for my purposes primarily because it shows that physical bodies are a type of object we need (over and above atoms or mereological sums of atoms) in order to account adequately for certain effects

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during a period of time including *t* and (2) none of them coheres together with any other bronze particles during that period….

[S]ome bronze particles compose a *bronze statue* at time *t* just in case (1) all of those particles cohere together at *t* in a certain overall configuration or shape, (2) those particles or replacements for them cohere together in that… same overall configuration or shape for a period of time including *t*, and (3) at no time during the period in question do the particles cohering together in that overall configuration or shape help to compose a larger lump of bronze (521).

A similar point can be made about principles of unity. There is a divide between individuals that are unified intrinsically and those that are unified only extrinsically, but there are important distinctions to be made within the category of intrinsically unified individuals. What makes a natural inanimate compound object like a rock to be one thing is the coherence between the particles that make it up. What makes a living organism to be a single thing will be whatever it is that ensures that a functional system of a certain sort persists. For simple individuals, if there are any, the question of what makes them to be unified is misguided.

we want explained. But the secondary point about the need to recognize a plurality of principles of identity, persistence and composition, ought to incline us all the more to the view that there is a significant conceptual need for physical objects.

I wish to discuss one further type of explanatory pattern in this sub-section, one that applies to physical bodies, but is likely not limited to that case. The point was raised, in the discussion of the Non-Reductionist Theory of objects in Chapter Three, that there is a way of appealing to an object's (or substance's) *kind* to explain why it has certain properties.[226] For instance, the extremely high melting point, density and refractive index possessed by diamonds can be accounted for by citing the kind of object a diamond is. This object, we say, has these properties, *because* it is an instance of the kind, *diamond*. The kind to which any individual belongs is determined by the essence of that individual. The essence which all individual diamonds share, and in virtue of which they belong to the kind, *diamond*, is constituted by the particular cubic crystal lattice structure which carbon atoms form when each joins with four other carbon atoms in regular triangular prisms.[227] What it is to be a diamond, then, is (at least in part) to be an individual with such a structure.

Once we determine to which kind an object belongs, we can make various useful predictions based on our knowledge of the characteristic properties of the kind in question. And, intuitively,

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[225] Lowe (2005), 522. This point about the statue applies even more strongly to the case of living organisms, since there may be stronger limitations on possible changes of constitution for items like statues than there is for organisms, which necessarily (given enough time) exchange all (or nearly all?) of their constitutive matter.

[226] There I gave the example of the possession of certain properties by a creature being explained by the fact that the creature in question is a black bear, that is, an instance of a certain kind of organism. Certainly there seems to be no obvious obstacle to there being kinds of a wide variety of individuals beyond the class of physical objects qua physical objects (and even perhaps of non-individuals).

what makes such explanatory and predictive practices possible is that the essence denoted by the kind (in the case of diamonds, the carbon lattice-structure) plays some sort of causal role in bringing about the various properties we observe. Such explanatory and predictive practices, then, seem to pose the conceptual demand for the existence of entities that instantiate kinds.

Of course the assumption made by this perspective, that (at least some) individuals do have essences that can serve as the referents of kind-terms, is not completely uncontroversial. Without getting involved in the numerous debates surrounding this topic,[228] I attempt to employ a relatively harmless notion of the 'essence' of an individual as consisting in whatever fact about that individual provides the fundamental criterion of identity for the class of individuals of which the same fact is true. And I remind those who will want to resist even the idea that individuals have essences in this sense, that I am not here *defending* the view that any sense of the notion of an essence is in the final analysis coherent, but am merely trying to articulate what seems to be involved in certain explanatory practices we (at least many of us) do in fact engage in. If it turns out in the end that essences ultimately need to be rejected, so much the worse for any explanatory pattern invoking them. My purpose here, to reiterate, is only to spell out the conceptual demands of our practices, not to establish the ultimate legitimacy of those practices.[229]

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[227] See the overview of the topic by Anne Marie Helmenstine, which can be found on the following site: http://chemistry.about.com/cs/geochemistry/a/aa071601a.htm.

[228] For instance, debates concerning whether individuals have general or individual essences, or precisely how essences and kinds are related, or how we determine what the essence of a given individual is. It will be enough, for the purposes of the current project, if we have a rough working idea of essence.

[229] Having said this, however, I would not be considering the practices I consider if I did not view them as important and likely to be legitimate.

A further qualification that needs to be made is that not every putative kind-term is a term that can meet the demands of the causal-explanatory pattern under examination here. For instance, the kind-term 'slime' does not determine a criterion of identity precise enough to delimit an essence which some class of entities could possess in common. The reason for this is two-fold. First, 'slime' covers too broad a range of entities – things with a wide variety of distinct and not necessarily related underlying structures can be called 'slimes' (roughly, anything with a sufficient viscosity, or anything sufficiently mucus-like can be considered a slime). Relatedly, 'slime' serves only to capture a loose set of properties, without the assumption that such properties result in a regular way from any underlying molecular configuration. The genuine kinds – those that unambiguously delimit an essence capable of playing a role in the kind-property explanatory pattern – will be, roughly, the ones that play a role in our best scientific accounts of the subject matter involving the class of entities denoted by the relevant kind.

But while it seems quite clear that the pattern of explanation under discussion requires that we appeal to *individuals*, it is not as clear that it requires appeal to *objects* (as opposed, say, to properties). To return to our earlier example, in saying that the kind to which instances of *diamond* belong is constituted by a particular carbon lattice structure (the essence denoted by *diamond*), we seem, in effect, to be saying that in virtue of the presence of certain *properties* (the properties of being composed of carbon atoms in a certain cubic crystal lattice formation), other properties are possessed. But if kinds are properties, and individuals are instances of those kinds, why aren't the individuals (instances of) properties as well? An apparently easy way of answering this objection is to point out that if kinds (or the essences denoted by kinds) are properties, then individuals must *a fortiori* be objects, since individuals *possess* these kind-properties. Diamonds,

for instance, possess the properties of being composed of carbon atoms in a crystal lattice structure. Intuitively, this seems to make sense, though as we shall see in the third section of this chapter, the notion of an individual required by kind-property explanations considered here may be only a very thin one.

4.1.2 Biological Explanations

The topic of this sub-section will be certain explanatory patterns that are more exclusive to biological science, and which require, *prima facie*, the existence of objects of a unique sort, namely organisms. Much effort was made in the 20th century to show that all teleological talk in biology (talk of "function" or "design") could be translated into talk of temporally linear efficient causation, and that biology could in this way be "naturalized". Key to effecting such translations is the force of natural selection. The resulting pattern of explanation takes the following general shape: "a trait's function or functions causally explain[s] the existence or maintenance of that trait in a given population via the mechanism of natural selection."[230] The appearance of an adaptation in a population can best be accounted for by citing the fact(s) that random trans-generational changes in traits (mutations) which are selected for over time cause the appearance (or disappearance) within a population of some feature, the result of which is that the organisms within that population become more fit for survival and reproduction in the environment they find themselves in. But explanations of this kind would be unable to proceed without a conception of an organism as a type of object. Even in order to handle the concept of a

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[230] Allen, C. (2003). "Teleological Notions in Biology," *Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.), URL = http://plato.stanford.edu/entries/teleology-biology/.

biological 'trait' or 'feature' we presumably need some intrinsically unified individual capable of possessing properties.

While the sort of efficient causal story outlined in the last paragraph is successful enough when the target of explanation is the presence (or maintenance) of traits in populations of organisms, there seems to be another way of asking about the functions of the various processes that take place *within an individual organism*, that requires another explanatory pattern. The processes in question are primarily the subjects of physiology, rather than evolutionary biology, and they include:

> (a) *Self-Propagation*: Organisms undergo continuous, internal and systematic self-regulation (maintenance) and self-reassembly (regeneration, as in healing processes).
>
> (b) *Growth and Development*: Organisms grow by systemic internal integration of nutrients (metabolism) rather than by aggregation.
>
> (c) *Reproduction*: Organisms come into being by means of sexual or asexual reproduction, a biological process resulting in the production of a new individual organism.

Each of the processes mentioned so far seem to depend on a further feature, namely,

> (d) *Interconnectedness*: The parts of an organism are mutually interrelated and interdependent in the sense that they support, respond to, and even *produce* one another in such a way that the organization or structure of the whole system is preserved.

We find, especially in the higher organisms, an uncountable number of sub-processes interacting harmoniously to make possible these higher processes, all of which operate in concert in such a way as to maintain in existence a single unified system, and this is something we do not find in

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inanimate physical bodies like rocks or heaps of sand.[231] And attempting to avoid the claim that each such process exists for the sake of the others and ultimately for the sake of the whole within which it operates is difficult (though not uncommon). The view that the teleological notions we need to appeal to in accounting for such processes are unique and ineliminable (yet nevertheless consistent with a naturalistic account of their role) is one that appeals to many contemporary philosophers of biology.

What seems to be needed, to account for such apparently goal-directed phenomena, is an appeal to some kind of *holistic causality*, according to which a whole may be temporally prior to its parts, and may thus causally govern or condition them.[232] The whole organism, or more specifically the survival and reproduction of the organism, provides, in a sense, the *reason* for the parts being as they are and entering into the structural relations into which they enter with one another. What coordinates the various organs (and tissues, and cells) and their functions, what causes them to conspire together, is the *purpose* to which they all contribute – namely the

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[231] A similar, though more detailed account of organisms than that suggested by Wiggins (2001, 86) is given by Hoffman and Rosenkrantz:

> Where x is a persisting organism, (i) x has parts which are m-molecules, that is, organic macromolecules of repeated units which have a high capacity for selective reactions with other similar molecules, (ii) x has a layer or membrane made of m-molecules whose limit is x's exterior surface, (iii) x absorbs and excretes through this layer or membrane, (iv) x metabolizes m-molecules, (v) x grows through an increase in the number of m-molecules that compose it, (vi) x synthesizes m-molecular parts of x by means of m-molecular parts of x copying themselves, (vii) x reproduces, either by means of x's m-molecular parts copying themselves, or by means of another, more basic process, (viii) x's absorbing and excreting causally contribute to x's metabolizing m-molecules; these jointly causally contribute to x's biosynthesizing m-molecules; these together causally contribute to x's growing and reproducing by means of the addition or copying of m-molecules; and x's growing causally contributes to x's absorbing, excreting, metabolizing, biosynthesizing, and reproducing" (Hoffman and Rosenkrantz (1998, 111-112).

[232] One sense in which the whole is literally prior to the parts in the case of organisms is that, since the component parts of the system are constantly changing while the system itself remains the same, the whole system must pre-exist some (many) of its component parts.

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"welfare" or "fitness" of the organism.[233] In other words, without the complex interactions of all these parts, the organism would not be able to develop and reproduce, or even just survive, in its environment.[234] Without appealing to a "purpose" of this sort, we would have no way of explaining the unity of the various regularities. So, "'Function talk' cannot get away from the question of 'welfare' or 'benefit', and the question of naturalizing such notions is central to the current conundrums" in contemporary philosophy of biology.[235] But if we recognize holistic causation as a legitimate form of causation, then we need to make room for teleological explanations alongside the efficient or mechanistic causation so useful in dealing with physical bodies.[236]

The upshot of all this is that the explanatory practices of (at least many) biological scientists – especially those practices that attempt to account for the processes undergone by living cells or multi-cellular organisms – seem to require us to appeal to objects. And these explanatory practices cohere well with our natural tendency to categorize systems of this sort, as we encounter them in experience, as objects. Furthermore, several distinguished ontologists, not least among whom are found Aristotle and Leibniz, take organisms as the prototypical objects or substances. For theorists of biology following Locke's example (e.g. Buffon), "'intrinsic

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[233] Purpose here is to be understood not as a psychological term (except by analogy), but simply as an ineliminably teleological feature of the way organisms are.

[234] Huneman, P. (2006) "Naturalising Purpose: From Comparative Anatomy to the 'Adventure of Reason'," *Studies in History and Philosophy of Biological and Biomedical Sciences*, 37C:4, pp. 649-674.

[235] Zammito, J. (2006) "Teleology Then and Now: The Question of Kant's Relevance for Contemporary Controversies Over Function in Biology," *Studies in History and Philosophy of Biological and Biomedical Sciences*, 37C:4, pp. 748-770.

[236] I recognize that the 'if' near the beginning of the conditional statement to which this note is affixed might be seen as a relatively large 'if'.

purposiveness' was a fact of the matter about concrete biological phenomena; the features of internal self-regulation were hypotheses arising out of actual research practice."[237]

Even if we adopt a more Kantian perspective, and claim that "we resort to causality according to purpose, in order to organize our reception of this phenomenon. But we do this… without presuming to *explain* it," we have to admit that teleology is at least an indispensible *enabling condition* for biology. As Quarfood, discussing Kant's view of biological teleology, puts it:

> The teleological identification of objects as functional units (natural purposes) demarcates a separate 'order of things', and it thereby makes biology possible as a special science pertaining to these objects. In this science, everything is viewed in a teleological light…. [T]his seems to be the case also in contemporary biology. Even the most sophisticated research in molecular biology is conducted from the point of view of the functions which the various substances under study serve for the organism. There could be a purely chemical, non-teleological study of the same substances, but it would lose its point if it were not embedded in a functional context. Or at least it would be of interest only from a strictly chemical point of view, having a relation to biology only in so far as the substances under investigation happen to be found in organisms. But… the notion of organism itself is dependent on teleology, so that a non-teleological consideration of such objects could only identify them as complexly built aggregates of matter.[238]

The story Quarfood is telling here is not a vitalistic one, since everything about organisms could be understood from the perspective of a chemist, or from that of a physicist, for that matter. But the teleological perspective is what makes organisms available to be cognized and explained by us; without it, "there would not even be any such unit as 'the organism' to consider. This is the sense in which teleology provides the objects of biological science."[239]

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[237] Zammito, J. (2006), 765.
[238] Quarfood (2006), 743.
[239] Ibid.

My intention here has not been to defend a certain view of the somewhat controversial nature of teleology or of biological organisms. Instead, I have been trying to show that the possibility of certain common explanatory practices, both in evolutionary biology and in physiology, seems to carry with it conceptual demands for organisms conceived of as objects. In each case we are dealing with intrinsically unified systems capable of bearing properties of various kinds, and the teleological understanding seems, in the case of objects of this sort, to be what underpins our thinking of them as units as well as our description of many of their properties.

4.1.3 Person-Involving Practices

A person is a kind of individual which seems to carry a very central significance for us. You and I, and our immediate family members and relatives are persons. Personal relationships (and the persons with whom we enter into them) are central among the things that concern us. But what are persons? As a first approximation, persons are the subjects of consciousness, of self-awareness, and of memories, desires, beliefs, feelings, and intentions. Persons are reasoners and reflectors, imaginers and knowers, rememberers, interpreters and rational agents. In general, the business of "making sense of others and of ourselves" and of interacting and co-operating with others seems to require the grasp and ability to make use of some conception of what it is to be a person that involves these various marks and others.[240] But, arguably, these marks would not be applicable to any individual thing if that thing were not an individual object.

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[240] Wiggins (2001), 198-99.

More specifically, the self-regarding and other-regarding practices which govern much of our daily lives would be unintelligible in the absence of the conception of a unified locus of properties of the sort that is a person. The specific person-involving practices I will take to be relevant for the discussion of this sub-section include rational deliberation in view of prudential self-concern, and attribution of moral responsibility (praise and blame). Persons, treated as enduring objects of a certain kind, are the targets of these practices. Within the literature on personal identity, the metaphysical units taken to be of ethical significance for the purposes of rationality and morality vary from *living human beings* to atomic momentary experiencers.[241] I will not be pronouncing on which of the different criteria of personal identity is correct, but will simply note that each of them seems to require a conception of a person that builds in object-like features.

A moral agent, at least on one standard way of looking at things, is a *rational* agent – an *intentional system* capable of engaging in rational deliberation. But the possibility of such a unified source of beliefs, desires, goals, and plans, an end-directed system capable of practical rationality, whose behaviors are governed by organized patterns of belief and desire, seems to be intelligible only when taken together with the concept of an object as *locus* of these various capacities.[242] In other words, without a conception of a unified and persisting self, we would be unable to successfully undertake deliberations which require arbitration and choice between various competing desires, as well as the ability to situate our immediate goals within the overall

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[241] Shoemaker, David (2005). "Personal Identity and Ethics" *Stanford Encyclopedia of Philosophy*.
[242] Even if they belong to a very special kind of object in virtue of their possession of capacities and dispositions and their entering into relations that are radically unlike those possessed or entered into by, for example, stones or clocks.

framework of a single life-plan.[243] Furthermore, we need the notion of a self to explain our concerns about our own future well-being that motivate our rational deliberative processes. So the concept of an object seems to be a necessary condition for conceiving of rational intentional systems such as persons.

The justification of our practice of attributing moral responsibility has traditionally been taken to require, as a necessary condition, a certain view of diachronic personal identity. The idea is that a person can be morally responsible or accountable for some action only if the action was performed by the same (numerically identical) person or self whose accountability is now in question. On the Lockean view of personal identity, a person is responsible only for those actions he or she remembers performing. This view of identity takes experiential memory and continuity of consciousness as *constitutive* of personal identity. Various contemporary accounts of identity also employ something like the following *psychological criterion* of personal identity:

> X at t_1 is the same person as Y at t_2 if and only if X is uniquely psychologically continuous with Y, where psychological continuity consists in overlapping chains of strong psychological connectedness, itself consisting in significant numbers of direct psychological connections like memories, intentions, beliefs/goals/desires, and similarity of character.[244]

Parfit's well-known version of this kind of view denies that identity really matters in survival, so long as psychological continuity and connectedness are preserved.[245] A person X is morally

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[243] Christine Korsgaard (1989) expresses a view along very similar lines.

[244] Shoemaker (2005), citing Parfit (1984, 207).

[245] An important point in favour of this view over any theory centred on numerical identity is that it accounts for the hypothetical case of fission (the dividing of a person's consciousness into two distinct streams, by means of the transplanting of two functionally equivalent hemispheres of the brain into distinct bodies) in a way that none of those theories seems to be able. It is not entirely clear, however, whether psychological continuity can be either necessary or sufficient for ownership of actions; cases where a person is brainwashed into forming certain

responsible for the actions of a person Y, on this criterion, only if X is uniquely psychologically continuous with Y. Similarly, by appealing to a criterion of this sort, we are also able to explain the rationality of our prudential self-concern and anticipation of continuing psychological life in deliberative practices, by showing how various psychological states belong to the same person in virtue of the intrinsic relations between them.

Since, however, personhood (in the sense given by the psychological criterion) is something that might arguably not apply to me at all stages of my existence – when I am very young or very old for instance – some have appealed instead to a *biological* criterion of identity for human beings according to which continuity of a single biological organism is what constitutes our identity. This view may take "person" to be a sortal term that applies to an object only during a phase of that object's existence (a *phase* sortal), rather than a *substance* sortal which applies to it during its entire existence, as "human being" would be. But it can also more straightforwardly *identify* persons with human organisms.[246] The nonreductionist view, which takes persons to be entities (Cartesian ego-substances or souls) entirely distinct from their brains and bodies, and thus from any facts about physical and psychological continuity, is in a way very similar to the biological continuity view. The difference is that in the former, the substance unifying the individual life and rendering it distinct from other lives is an ego and not an organism. Like

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intentions may tell against its sufficiency, and cases of "brain trauma causing psychological discontinuity" may tell against its necessity.

[246] This seems to be the view that Wiggins prefers. See his (2001), p. 195ff. For a related view, see Strawson's *Individuals*, Ch 3. Persons, then, would be the subjects of both consciousness-involving and body-involving predicates. Whether or not in turns out that all of the former kind of predicate are (reducible to) predicates of the latter kind can be left as an open question (Wiggins, 195, note 3).

However, even if biological continuity does a better job of giving a metaphysical characterization of diachronic *human* identity, argues Shoemaker, it seems to be irrelevant to any attempt to account for the practical concerns of rational anticipation and moral responsibility, at least according to certain strong intuitions we tend to have - intuitions like the transplant intuition (Shoemaker (2005); see also Olson (1997b), 43-51, DeGrazia (2005), 51-54,

organisms, nonreductionism's ego-substances are frequently dismissed on the grounds that they are irrelevant, for practical purposes, except insofar as they possess various psychological connections, and are thus entirely dispensable in favour of a view which concentrates solely on those connections.[247]

Others (e.g. Schechtman 1996) deny that the source of numerical unity is what needs to be found out, and have tried instead to account for personal identity by appeal to a "Narrative Criterion." On this view,

> what makes an action, experience, or psychological characteristic
> properly attributable to some person (and thus a proper part of his or
> her true identity) is its correct incorporation into the self-told story of
> his or her life…. Narrative identity is thus really about a kind of
> psychological unity, but not just an artless or random unity.[248]

Accordingly, there can be no genuine moral agent or person unless the experiences of a subject are "actively unified… gathered together into the life of one narrative ego by virtue of a story the subject tells that *weaves* them together, giving them a kind of coherence and intelligibility they wouldn't otherwise have had."[249] Since the narrative account makes each person identical with an extended narrative ego which encompasses her past and future existence, it is rational for any person to be concerned about the entire self generated by the narrative and to anticipate (as belonging to her) future experiences that will fit in with her on-going story. Ownership of actions, and hence moral responsibility, is explained by the connection between the action and

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references provided by Shoemaker), according to which "rational anticipation, self-concern, moral responsibility, and the like can be justified [by appeal to psychological relations] even in the absence of biological continuity."
[247] Furthermore, since we can have, in principle, no indication of when a featureless ego-substance is present (again, besides the indication given by the physical and psychological properties), for all we know we could be being replaced moment by moment by qualitatively identical ego-substances, in which case we could never be sure that we had reidentified a person, nor would we be justified in claiming special concern for some future stage of our bodies.
[248] Shoemaker (2005).

the agent's "central values, beliefs, and experiences" to which it is united by the story being told. Thus a person is numerically identical over time in virtue of a kind of "unity of character" – the "unity" of an actor in a story – needed for narrative coherence.[250]

It is beyond the scope of this sub-section to adjudicate between the various conceptions of what personhood consists in. The important thing to notice here is that whichever view one chooses, one will be in need of some notion of an object to make the view intelligible. If the presence of an enduring biological organism is found to be a necessary condition of personal identity, one will clearly be in need of the notion of an object, insofar as biological organisms are objects (as was shown in the previous sub-section). But even if one adopts a non-reductionist or a narrative view according to which no particular biological organism is essential to support psychological continuity or narrative unity, some object-like notion of a unified source of rational deliberation and moral responsibility will nevertheless be necessary.

I have focused attention on three different types of practices that seem to require appeal to objects: causal explanations that involve physical bodies, biological explanations that involve organisms, and our person-involving practices of rational deliberation and attributing moral responsibility. In addition, an explanatory practice of citing kind-membership as explanatory of property possession was discussed as involving physical bodies, though as noted, it could apply to other sorts of objects as well. A comprehensive list of object-involving practices would be

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[249] Ibid.
[250] A question arises, however, about whether the narrative in fact *creates* the unity of the events and experience, or only *describes* the pre-existing numerical unity of the subject of the various experiences.

significantly longer than the one I have provided here. But the examples I have chosen should give some indication of the breadth of application of the idea.

4.2 The Family-Resemblance Account

The preceding section showed that there are compelling reasons that support the *prima facie* very plausible contention that the concept of an object is indispensible to us. Any attempt to enumerate the furniture of the world that proceeded without such a concept in place would appear, at the very least, to be in need of some fancy footwork to explain how the host of apparent conceptual demands for objects could otherwise be met. Nevertheless, this contention appears to be in conflict with the conclusion reached at the end of Chapter Three, namely that no unproblematic general assay of objects is available or likely to be forthcoming. This is troublesome because if objects are necessary inhabitants in any adequate descriptive ontological system, we should be capable of telling a coherent and satisfying story about what they are like, ontologically speaking. In this section I will attempt to explain, in general terms, the strategy I want to recommend for resolving this apparent conflict.

4.2.1 The General Strategy

The first step in my proposed resolution is to note that the ontological distinctions which were put to use in generating the concept of an object (an intrinsically unified independent concrete particular) in Chapter Two are not as rigidly organized as the hierarchical scheme (objects are a sub-type of particulars which are a sub-type of individuals) I employed there may have suggested. Alternative hierarchies could be formed out of the relevant distinctions; for instance,

rather than proceeding as we did, taking intrinsic vs. extrinsic unity as the primary division, we could instead have begun with particularity vs. universality, dividing each of these into intrinsically and extrinsically unified entities, and moving on from there.

The ontological distinctions we have been using are best viewed as conceptually fundamental pairs of correlative concepts which could be represented by ones and zeros. We might use an analogy here and call the result of the relation holding between any given pair an *ontological dimension*. But in using an analogy of this sort, we would have to make clear that at least some of the dimensions consist only of opposite poles, with nothing in between (there do not seem to be *degrees* of particularity or universality, or of concreteness or abstractness, even if there are degrees of unity). So it would be incorrect to see the various dimensions as giving rise to an ontological *space* within which, at any point, entities of a certain kind could be located. It will be useful for the ensuing discussion to consider each of the distinctions from Chapter Two as assigning a 1 or a 0 to an individual according to the following table:[251]

Dimension	1	0
Unity	Intrinsic	Extrinsic
Instantiation	Particular	Universal
(Ontological) Status	Independent	Dependent
Locatedness	Concrete	Abstract
Identity	Determinate	Indeterminate

Table 2. Ontological "Dimensions"

Each sort of individual will then have assigned to it a sequence of ones and zeros depending on where it sits along each ontological dimension. For ease of discussion I will refer to the poles

[251] Even though it appears to be an important feature of many objects that they are capable of persisting through time, I have not included a dimension on which this feature would represent a pole, mainly because the opposite of 'being capable of persisting through time' seems to be almost empty.

represented by the labels in the 1-column the "robust" poles of each dimension, and to the poles represented in the 0-column as the "ethereal" poles.

What makes this useful is that we now have a way of discussing *types* of individuals in terms of ordered quintuples of ones and zeros. So far nothing implies that every combination of ones and zeros corresponds to a useful notion of an individual, but at this stage we have not ruled any out, either. In addition to asking whether a score of one on any particular dimension is required for some type of individual to qualify as a metaphysically significant type, we might also ask the question whether there are relations between the dimensions such that a score of one or zero on one dimension would necessitate a score of one or zero on another dimension. For instance, insofar as intrinsic unity involves distinct parts being made into a unit or individual that exists over and above the parts of which it is composed, it would seem that entities like properties, for instance, are not the kinds of thing that have parts in the relevant sense (even if they can be structured on the properties of and relations between the substantial parts of the entity whose properties they are – recall Robb's account of the colour of a tennis ball being structured on the colour of the right and left halves of the tennis ball). But if properties do not have parts, they are not candidates for either intrinsic or extrinsic unity. To ask whether the colour of a tennis ball is one thing or many things seems to be, in some way, a misguided question. If this is true, however, it would suggest that some individuals might fall outside of one or more of the dimensions.

The naïve perspective would be to require that every metaphysically significant individual score ones across the board. In Chapter Two, I tentatively identified the most robust sense of

'individual' – the sense I spelled out as being an *intrinsically unified, independent concrete particular* – with the commonsense notion of an *ordinary object,* the idea captured by the phrase 'middle-sized dry goods'. I also argued there that most, if not all, of the individuals that we, as human beings, care about fall under this category, which is a reason for seeing this notion as an especially important one. In view of the reframing of the ontological perspective I am advocating, what is correct in the thoughts expressed by each of those claims can be clarified and better explicated. Firstly, the commonsense notion of an object is, as most commonsense concepts are, imprecise, so that we should not expect the commonsense notion of an object and the much more precise term of art (IICP) to be co-extensive. Secondly, to say that anything qualifying as ontologically significant must sit at the robust pole of every ontological dimension is untenable, as will be borne out by what follows. Insofar as the concept covering a type of individuals does sit at a robust pole, to that extent the type will be "object-like" or ontologically significant. But individuals generally, and even those that come closest to falling under the notion of an IICP, can be object-like in some respects but not in others, and this fact should not disqualify them from counting as ontologically significant.

I have already suggested that the tendency to want to work with a single, univocal notion of objecthood leads to problems of different sorts in ontology. Furthermore, thinking of ontologically significant individuals as having to be at the robust pole of each dimension is one source of the difficulty that the project of attempting to give ontological assays of objects encounters. Each assay attempts to give a *general* account of objects – one that ranges over too wide a variety of distinct kinds of individuals to be able to say anything truly informative that would apply to all of those kinds. There are so many (sometimes radically) distinct kinds of

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ontologically significant individual - organisms, mereological sums, artifacts, natural inanimate formations, atoms, persons, etc. – that it seems unreasonable to expect there to be a univocal, governing concept or ontological account applying to them all. Instead, each of the various types of individual identifiable *via* the conceptual demands of different human practices may warrant categorization as belonging to a unique kind of ontologically significant individual, as falling under a unique (whether the difference is radical or only quite subtle) *individual-concept*.

The "family-resemblance" account of individual-concepts I am describing, if true, may enable us to take an important step toward resolving the tension between the apparent conceptual demand for objects our practices impose and the failure of any comprehensive assay of objects. It may turn out, if the family-resemblance account is correct, that Bundle Theory is capable of accounting for individuals of certain types, even if it cannot deal with individuals of other types. In certain cases we will have to turn to some form of Substratum Theory, or perhaps the best we will be able to do in certain cases is to adopt something like a Non-Reductionist approach. But before being in a position to make any definite pronouncements on which assay is capable of handling which type of individual – if in fact it turns out that any of them *are* capable of adequately handling any type – I first need to show that the project of distinguishing different individual-concepts for the various types of individuals required by our practices is a feasible one.

Is there anything we can say *a priori*, before looking at the concepts generated by the conceptual demands of specific practices, about conceptual relations that obtain between the various ontological distinctions that are available to us? Firstly, any individual will be a singular

entity – and thus a unit – whether their unity is derived intrinsically or only extrinsically. To see this, try to imagine an individual that is not singular but irreducibly plural in the sense that it could not appropriately be unified even extrinsically, by the mind's activity. In such a case, we would lose the basis for calling whatever it is we were considering *an* individual at all. But 'individual' is a count noun. Hence, no individual could be irreducibly plural in this sense. A mereological sum is perhaps the closest candidate for an exception to this rule. But, considered as an individual, even a mereological sum possesses some unity – namely the unity we impose on it when we treat it, conceptually, as an individual. For this reason I have not represented individuality and plurality as a separate dimension in the list.

It is not nearly so clear that all individuals have to be particulars (non-instantiable entities).[252] For what principled reason could we appeal to in order to exclude universals from consideration as individuals? There seems indeed to be a way of thinking of universals as abstract (non-spatio-temporally located) individuals, in spite of the fact that they are non-particular (they are multiply instantiable). On the other hand, it could be argued that the referents of abstract nouns ('brotherhood', 'tallness', 'courage', 'intelligence') cannot be seen as individuals except by means of a significant distortion of linguistic-conceptual convention. This is perhaps part of the reason we find Platonic transcendent universals so intuitively strange. The fact that we react against the reification of such entities seems to indicate that we naturally employ a concept of individuality which excludes universals. At the same time, it is possible that all this shows is that we acquire our concept of individuals from our experience of ordinary non-instantiable particulars. But

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[252] Saying this would not entail that all particulars must be individuals. Interestingly enough, it seems that even irreducibly plural entities (e.g. physical stuffs) could be particulars. This point indicates already the flexibility of the placement of entities on the various ontological dimensions.

facts about how concepts are acquired need not (even should not) rigidly constrain further extensions of their application.[253] And it sits well with the flexibility of the ontological perspective I am advocating here to leave it as an open question whether there could be non-particular individuals, even though such individuals would be quite radically different from any we ordinarily experience. Though each of the three main types of individual I will be considering in the following section will be particulars, the motivating example I will raise before I get there might well not be.

In spite of the fact that most of the individuals we encounter exist in space and in time, concreteness is not a necessary conceptual element of ontologically significant individuals either, as the next sub-section, which considers numbers, will bear out. Moreover, it is difficult to find instances of entities which lack determinate identity. Yet they can apparently be found, as some descriptions of quantum-level particles seem to indicate.[254] And it is possible that the identity of entities that possess vague spatial boundaries may not be fully determinate. But what about independence? Independence seemed, in Chapter Two, to be the hallmark of our standard conception of ontological significance, and was given as the key distinguishing feature of IICPs. As we shall see, however, certain ways of looking at physical bodies and at persons may require us to re-examine even this apparent invariance.

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[253] And there certainly are other potentially dependent entities, like tropes or events, which seem to be capable of serving as the referents of concrete nouns without too much of a stretch of linguistic convention (I have in mind D. C. Williams' 'Hamis' and 'Borcas' as names for the particular shapes of certain lollipops, as well as names for events such as 'The Battle of Hastings'). Again, not wanting to be sidetracked by an attempt to resolve this kind of complex issue here, I will attempt to remain neutral on the issue. I refer the reader to a discussion of related issues in Fraser MacBride's (2005).

[254] It might appear that I am equivocating on the word 'identity' here since determinate (synchronic) identity is not the same as the diachronic identity which seems to be lacking in the case of quantum particles. Yet granted that these two senses of 'identity' are distinct, it is nevertheless in virtue of the fact that an individual possesses a certain determinate (synchronic) identity that we can pick it out at a later time as the same (diachronically identical)

The general thesis I take these considerations (and those that will follow immediately) to support is that in order for something to count as a member of the family of ontologically significant individuals (whose concepts, taken together, should take the place of our problematic general notion of an IICP in an improved ontological framework), it must score a one on some ontological dimension or other (and possibly on more than one dimension), though it will not be necessary that it score a one on every dimension. If this is true, then conceiving of something as ontologically significant will not necessarily be hindered by the inclusion of some zeros, however counter-intuitive this might feel so long as we remain in the grip of the idea that object-like (ontologically robust) individuals are those that fall under the concept of an IICP. We can afford, to some extent at least, to be neutral about where individuals are situated within the schema. Some of the force of the original identification of all ontologically significant individuals with Chapter Two's IICPs is retained by the claim to which I will continue to adhere, that no entity under consideration for ontological significance that came out on the 'ethereal' side of every one of the dimensions would make the cut.

4.2.2 A Motivating Example: Numbers

This sub-section presents an examination of a kind of individual that involves a particularly unusual assortment of ontological ingredients, in order to help bear out the idea that the ontological framework I have been describing is flexible in the way I have been claiming it is.

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individual, and so the two sorts of identity are intimately related. Thanks to Doreen Fraser for pointing out the need for clarification on this point.

While this is a hotly disputed matter in philosophy of mathematics, at least at first blush, numbers (and, indeed, many sorts of "mathematical objects") seem to be best described as *abstract, independent individuals*. They are obviously not something we come into contact with in the way we do with spatially located entities, and they do not seem to be the sort of thing that is bound to time. Nevertheless, they seem to be independent, since they are entities which have properties and enter into relations, but are not had by anything else. Numbers can be odd or even, prime or not-prime, etc.; we also say that 4 is twice 2, or that 3 is a factor of 6. They are *loci* of various properties (capacities, dispositions, etc.) in a sense that is at least relevantly analogous to that in which physical objects are. The score that a number must achieve on the unity or instantiation dimensions, however, seems to be open to debate, and to depend on whether one sees numbers as mental constructions of some kind, or as more akin to the Platonic Forms. But it is interesting to notice that, without explicitly taking sides on the issue, mathematicians are not hindered in carrying out extremely complicated operations requiring quantification over numbers. This seems to suggest that it may not matter to us whether the source of the unity of numbers is taken as intrinsic or extrinsic to them, or on whether they are, in the final analysis, particulars or universals.

This last point raises an additional consideration in support of the flexibility of the ontological schema in which the various individual-concepts are located. In addition to the possibility of different individual-concepts lying at opposite poles of some ontological dimensions, it is also possible that our concepts of certain kinds of individuals can be unspecific concerning which pole of a given dimension they involve. What this shows is that even if ontology, when done for ontology's sake, will naturally be picky about representing each of the fine-grained distinctions

that differentiate one sort of entity from another, in its role as provider of a conceptual schema in which our more specific projects (everyday or scientific) proceed, ontology's job will be accomplished so long as no distinctions that are of practical or scientific importance are left unrepresented in the framework.

4.3 Three Examples of Individual-Concepts

Having illustrated the flexibility of the ontological framework I am describing, I now want to proceed with showing where the three individual-concepts required by the practices discussed in 4.1 fit in to this framework. By doing so, I hope to show that even though various practices of ours require that we appeal to individuals, nevertheless the individual-concepts we employ in each case are in fact distinct, though related, concepts.

4.3.1 The Concept of a Physical Body

I argued above that, *prima facie*, (at least very many of) the kinds of explanations we make use of in day-to-day life and in science require us to use a concept of a physical body. The specific example I used to illustrate the point was of a falling rock, upon striking the earth, causing a depression in it. Since we are dealing, for such practical purposes, with compound bodies as represented by our folk-physics conception of them, we are also clearly dealing with *concrete* and *particular* entities. That much seems relatively indisputable. What about unity and ontological status?

If what we said above in agreement with Lowe is correct, the relevant kinds of explanatory purposes seem to require individuals that are intrinsically unified in some way. If physical bodies

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were exhausted by mereological sums, we would need only extrinsically unified (albeit still concrete and particular) individuals. But we saw that appealing only to the granite particles without specifying the way in which they cohere together to form a whole of some kind was insufficient for explaining the kind of phenomena under consideration. And surely the relations of coherence that make the particles into a single object hold between them regardless of what we think about it. So even if we populate our ontological scheme with mereological sums, they will need ontologically more robust neighbors on the unity dimension.

Can we get a more precise specification of the principle of intrinsic unity involved in the case of physical bodies? Here, the notion of a *mereological compound* developed by Hoffman and Rosenkrantz and discussed earlier can be of use. Unlike mereological *sums*, mereological compounds cannot survive having their components scattered to the four corners of the earth. For the purpose of explaining, by appeal to the presence of some physical body, the kind of macroscopic effects we are concerned with, there will need to be some significant set of particles connected via the joining relation, but what will not be required is that every one of the particles so connected remains connected throughout the period of time we are concerned with. The fact that some quantity of atoms originally adhering to the surface of the rock comes loose and separates from it upon collision with the earth does not bring about the generation of a new, numerically distinct rock, as it would in the case of a mereological compound.[255]

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[255] And the fact that some of these particles are left behind in the depression, while the bulk of the rock rolls a few meters away, though part of the causal story at a sufficiently precise level, need not be part of the macro-level causal story we are interested in.

For this reason, although physical bodies should be seen as intrinsically unified entities, and although the principle of their unity is given by something like the principle of unity for mereological compounds, we need to be sensitive to the difference between the conception of the latter type of object and the conception of physical bodies that our explanatory practices require. As we saw earlier (1.2), our conception of a physical body is, in regard to the specification of its parts, relatively imprecise (relative to the conception of a mereological sum or a mereological compound). Given the fact that mereological compounds typically are not the sorts of thing that endure through time, it seems to me that it would be more ontologically economical to dispense with them altogether and make do with physical bodies and mereological sums. But I will not argue the point here.

As we have seen, physical bodies differ from mereological sums in regard to the source of their unity. Interestingly, however, the concepts relevant to these two types of object seem to adhere to the same pole of the ontological status dimension. In one sense of ontological independence – the sense that we appealed to in order to distinguish objects from properties (or events), even mereological compounds seem to fit the bill. Take a given mereological compound, a roughly spherical collection of cohering atoms. Call this mereological compound 'Lu'. Since it is true that Lu could have existed without being spherical (if, for instance, Lu was cube-shaped instead), Lu is not ontologically dependent in the sense that Lu's sphericity is (Lu's sphericity could not have existed without Lu). All three kinds of objects (sums, compounds, and bodies) are independent of at least some of their properties. At the same time, however, both sums and bodies depend, quite directly, both for their identity and their existence, on the atoms of which they are composed. If all the particles composing a rock were annihilated and different

particles were put in their places, this would be a clear case of the generation of a numerically distinct rock. And although a similar point would hold for mereological compounds, these will again differ from physical bodies in the sense that if a single atom were removed from a mereological compound, we would have a different compound, while I have argued that the same thing is not true for physical bodies. In virtue of this apparent admissibility that physical bodies may endure through gain or loss of some microscopic parts, there seems to be some indeterminacy in regard to the identity of physical objects, since there seems to be no principled way of specifying their spatial boundaries. Even in the course of a single causal interaction, the particles composing the body acting as agent may not be the same at the end of that interaction as those composing it at the beginning. So in regard to the identity dimension, the object-concept for physical bodies may belong on the ethereal pole.

The kind of indeterminacy involved does not, however, seem to matter insofar as we are considering the concept of a physical body as a unified locus of causal powers, an actor in certain causal stories. It seems that our concept of a physical body like a rock actually contains two components. On the one hand we think of a rock in terms of the particles constituting it; on the other hand we think of it in terms of the causal powers it possesses. Arguably, if our concept only included the causal component, it would make sense to say that two rocks (call them Lo and Bo) could turn out be the same rock even though entirely constituted of different particles, so that Lu and Bu (the mereological compounds composed of Lo and Bo's atoms) are different.[256] But it does not seem to be the case that our concept of a rock includes only the

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[256] Consider the following hypothetical situation: Two large igneous rocks (Lo and Bo) are formed via crystallization of magma and are deposited on the slope of a volcanic mountain. For the sake of the thought experiment, imagine that Lo and Bo are composed of precisely the same number of atoms, in identical proportions of aluminum, sodium

causal component. We cannot think about a rock without thinking of it as a unified group of particles. We cannot separate out the causal aspect from the concept even if what it is to be a rock is mainly constituted of being a locus of causal powers of a certain sort. Part of what it means to be a rock (or a unified mass of matter more generally) is – approximately – to be a certain mereological compound. The macro-level causal powers of the rock are very directly linked to the presence of the particles that compose it. In certain cases, it is explanatorily sufficient to appeal to the rock's particles alone, for instance in explaining the effect on the needle of a scale on which the rock has been placed.[257] No mention of the unification or arrangement of the particles is needed in such a case, though as we have seen it is needed for other explanations.

But if the concept of a rock is indeed the concept of a mereological compound plus the macro-level causal powers resulting from the unification and arrangement of the particles and minus the necessity of every particle remaining part of the compound throughout the course of its existence (since our concept of things like rocks just is not so fine-grained as that), then it

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and calcium, and that the configuration of their atoms is also identical, so that the resulting overall shape of Lo and Bo is exactly the same. Three boys find Lo at time t, and proceed to push Lo over the edge of a cliff on the mountainside, and Lo causes a depression in the soft ground at the foot of the cliff. This depression subsequently comes to be known as the 'hole of good fortune', being so named because it was formed by Lo within inches of the Queen who was riding horseback along the trail at the cliff's foot at the time when Lo was launched over the cliff's edge. Now consider a possible world which differed from the world in which Lo was discovered by the boys in the most minimal way needed for the locations where Lo and Bo were deposited (having already been formed before the processes leading to this difference began) to have been exchanged. In this second world, the boys find Bo instead of Lo, so that it is Bo instead of Lo that causes the depression. Would we say that a different rock caused the depression in each case? Concerning Lu and Bu we would undoubtedly say this, but what ought we to say about Lo and Bo? The description, "The Rock found by Peter, Thomas and Nathanael which caused the famous Hole of Good Fortune" would apply just as much to Bo in the second world as to Lo in the first. Thus, there is some temptation to say that Lo and Bo are in fact the same rock across worlds. However, as noted, this is not what we say, upon reflection. There is not even a temptation to say this about Lu and Bu, since (*ex hypothesi*) two mereological compounds formed from different atoms are different. And it seems that the only reason to deny that the description applies to Bo (in the first world) and Lo (in the second) is that part of what it is to be Lo is to be Lu, and in the same way being Bo includes being Bu.

[257] I am again borrowing an example from Lowe here.

seems as though we do have to say that rocks are dependent on the particles composing them. In general, for an entity to be ontologically independent, it must not depend necessarily, for its existence or its identity, on any other entity (though it can still depend on some *type* of entity). So by this criterion, physical bodies (along with mereological sums and compounds) must be taken to score a 0 on the ontological status dimension. And this does seem to be in accord with intuitions like the one I mentioned above; if Peter, Thomas and Nathanael (in the first world mentioned in footnote 256) were told that all the particles in Lo were instantaneously replaced with particles from Bo, they would intuitively feel that they were now holding a different rock.

Taking stock of all of these considerations, the individual-concept that applies to physical bodies is the concept of an *intrinsically unified, dependent concrete particular whose identity is not fully determinate*. The concept given here includes three ontologically robust or "object-like" features, combined with two features (ontological dependence and indeterminacy of identity) which make it fall short of the ontological full-bloodedness of the notion of an IICP. Clearly, then, things like rocks do not count as objects in the sense of that word given in Chapter Two. Even so we can see easily how they are ontologically significant individuals, and just where they fit in to the ontological scheme I am suggesting. It is important to remember that the individuals falling under the extension of this concept are the macroscopic compound bodies we experience *via* our senses (with or without minimal technological extensions to our sensory capacities) and hence would exclude fundamental physical particles.

The concept applicable to the kind of individuals required by the kind-property pattern of explanation seems to be notably thinner and less precise. Here we are considering individuals

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simply as instances of their kinds. Princess the poodle is an instance of the kind 'dog' and so is an organism and a physical body. But here we are thinking of Princess only as an instance of her kind. The main requirement, imposed by the constraint of belonging to a (genuine) natural kind, is that the individual in question possess a determinate identity, that is, that there be a definite answer to the 'What is it?' question concerning the individual in question. Kind-instances, on this count, would seem to qualify immediately as particulars. But to be a particular it is not sufficient to be an instance – a particular individual must also be non-instantiable. To see this consider that Justice is an instance of Virtue, and yet is itself instantiable (even if rarely instantiated). So particularity cannot be simply equated with 'being-an-instance'. For similar reasons, concreteness cannot be a necessary requirement for kind-instances. Again, kind-instances need not be intrinsically unified. The kind 'set', for instance, has many instances and bestows on them perfectly determinate identity conditions, yet it is plausible that all sets are extrinsically unified. Indeed many of the kind-instances we encounter will be intrinsically unified, concrete and particular; but this is not a requirement of the sort of explanation currently in question.

Kind-property causal explanations of the sort that require non-instantiable instances do seem to involve independence of a certain sort, since kinds will be taken as causally prior relative to the properties caused by them. The causal entailment flows from essence to property and not vice-versa.[258] If x has an essence E, then x has property φ (or will have one of some range of φ-properties, in the case of accidental properties), but the reverse (If x has property φ, then x has essence E) will not hold. Relative to the properties they bear, then, kind-instances, considered

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qua kind-instances, seem to be independent. Of course, the possibility that an instance of a certain kind will be dependent on entities of some other sort will always be open, and the answer to it will be determined by the kind being dealt with.

The concept of an individual kind-instance, then, is the concept of an *individual with a determinate identity.* The facts that (a) there aren't any entities that are pure kind-instances without further qualifications and that (b) the kinds involved will make large differences in the ultimate pronouncement about where a given instance sits on various ontological dimensions makes the project of determining a unique concept for individuals relevant for the practice of the kind of explanation we've been considering a task of potentially dubious helpfulness. Indeed, whether the entity invoked need even be an individual at all might be an open question here, since there seem to be natural kinds for stuffs as well, even if any specific *portion* of stuff will be characterized as an (either intrinsically or extrinsically unified) individual. Still, developing such a thin and imprecise concept in response to the demands of a particular explanatory practice can provide a kind of limiting case of what is possible on the kind of ontological perspective I am attempting to develop.

4.3.2 The Concept of a Living Organism

Which of the conceptual elements will be involved in the individual-concept relevant to organisms, as determined by the conceptual requirements of the biological explanations we discussed above? As was the case for physical bodies, it seems entirely uncontentious to say that

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[258] Of course, strictly speaking for a lot of the properties of a thing to exist more is needed than that x has E – the

organisms are concrete individuals; non-spatio-temporally located living organisms seem to be ruled out by the parameters of our biological theories.[259] And the idea of a multiply instantiable organism also seems to transgress certain conceptual boundaries that it would be too costly to abandon. So organisms seem to be concrete particulars.

Moreover, the idea of an organism seems to be the idea of something intrinsically unified. This point flows quite naturally from the consideration of organisms as functional units, whose various processes and parts are somehow ordered toward the maintenance and well-being of the whole as a living system of some biological kind. If functional unity is indeed indispensible to our ability to conceive of an organism as an organism (as opposed to conceiving of the mereological sum or the physical body present at the same spatio-temporal location as the organism), then it is clear that the source of an organism's unity cannot be extrinsic. For there does not seem to be any obvious way in which the functioning of organs, which sustains the organism, depends on the beliefs or other conceptual features of a cognizer. There is, of course, a literature which holds that functions are always interest-relative and hence non-objective. But as I am not defending the teleological perspective I am discussing, but rather attempting to demonstrate what notion of an individual is required for this particular approach to biological explanation, I am simply assuming its legitimacy. So although the objections raised by the interest-relative perspective on functions are both interesting and important, it will not be part of my task to answer them here.

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environmental conditions and laws of nature also have to be a certain way for the properties to be expressed.
[259] One interestingly distinct aspect of the concreteness of organisms is that they cannot exist at a single point in time. For the notions of fitness and of function, both of which are central to conceiving of living organisms, are

Conceiving of organisms as ontologically independent items seems, initially, to be incorrect, for the same reasons we found for denying that status to physical bodies. For although organisms, as much as physical bodies, certainly are the bearers of properties and are (presumably) not themselves borne by anything else, it also seems true that just as physical bodies were seen to depend on the particles composing them, so organisms could not exist or be what they are without the particles making up their organs, tissues, and cells. But this latter point is not quite correct, since no organism depends on any given set of particles, as is witnessed by the fact that the matter of which organisms are composed is constantly being exchanged with the environment. There is, in the case of organisms, only a generic or type-dependence on material composing parts – their existence and identity presupposes some entities of a certain sort – but not any specific or rigid dependence on any particular entities.

So as long as we limit our idea of what ontological dependence involves to the rigid case, it seems unproblematic to hold that living organisms are ontologically independent in a way that physical bodies are not. This leaves us with the following individual-concept relevant to living organisms. Living organisms are *intrinsically unified, ontologically independent concrete particulars*. They are, in a way that physical bodies are not, objects in the most robust sense, which explains why those who have attempted to say what the paradigmatic individual substances are have so often pointed to living organisms. Though, of course, if independence is taken to involve the stronger idea that an entity, if it is ontologically independent, is not even generically dependent on any entity besides itself, then the individual-concept applicable to organisms would swing to the ethereal pole of the ontological status dimension we are considering.

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both notions that entail temporal extendedness, even if the parts (and relations between them) of the organism that

4.3.3 The Concept of a Person

In 4.1.3's discussion of our *prima facie* conceptual need to think of persons as objects of some kind, we noted that there are many distinct accounts of what a person is and of what it takes for a person X to be identical to a person Y over time. Shoemaker, whose overview guided us in that section, ends up suggesting a pluralistic approach to relating personal identity with various practical concerns. Adopting his view for the purposes of this section, and setting aside the problematic aspects of each account, I will assume that the psychological criterion of personal identity yields the appropriate conception of personhood for the context of rational deliberation, while the conception most suitable for moral responsibility and ownership of past actions is provided by the narrative criterion of personal identity.[260]

What ingredients are required of an individual-concept answering to the needs of each conception? In either case, it is straightforward that particularity will have to be involved. Concreteness also seems to be a component of our individual-concept for persons. We regularly encounter and interact with persons in space-time. Of course some have argued that spatial locatedness might not be a condition for personal existence, as in the case of angels or disembodied spirits. And a still more extreme conception would argue for the possibility of extra-temporal personal existence in the case of a transcendent Creator. Since, however, these are controversial waters to swim in, and are sometimes considered philosophically dubious, and

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enable the functioning and success of the organism in its environment can exist at a single instant.
[260] I thus leave aside the conceptions of personhood involved in the bodily and non-reductionist criteria of personal identity, as they do not seem relevant or necessary to the purposes we have been considering. Furthermore, even if the bodily criterion were relevant it would be uninteresting since it would require an individual-concept identical with that for organisms.

since all parties acknowledge the existence of embodied human persons, I will limit the scope of my considerations to them, apart from this note of room for debate.

Another element that seems to be involved in either conception of personhood is independence, at least in the sense that persons, in order to serve as the subjects either of praise and blame or of rational deliberative processes, must be *loci* of a multiplicity of properties, capacities and dispositions. Persons are the subjects of conscious states, of memories, intentions, feelings, etc. They also must be agents of some kind. Nevertheless, as will soon become evident, independence in some other respects may not be available to persons on at least one of the two conceptions of persons.

When the question of unity is raised, the two conceptions of personhood diverge more obviously, being attracted to opposite poles of that dimension. If the narrative account of personhood is taken seriously, then it seems that persons are in some way generated by the activity of story-telling (whether the story is told by one or by many persons). But if the unity of a person is the result of the mental activity of some thinkers, the independence of persons comes into question. For without these activities, there would exist no person, even if there existed a human organism engaging in various interactions with other entities.[261] And the dependence we find here is fairly rigid.[262] The identity and existence of a person depends on the telling of a *specific* story; if the story-telling were to take place in a different way, we would

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[261] If narrative unity required the continuity of a single organism linked to the narrative ego this would be a further source of dependence. But there seems to be no reason to think such a linking to be a necessary requirement, even if the persons we usually encounter all seem to be linked to single organisms.

[262] By 'rigid' dependence here, I mean dependence on some specific entity, as opposed to 'generic' dependence which would involve only dependence on some member or other of a given class of entities.

presumably have a different person. Ignoring the threat of circularity this account of personhood faces (since the unity of persons seems to presuppose the (personal) unity of those entities telling the story), we can conclude that the individual-concept applicable to a person, on the narrative view apparently needed to account for ownership of actions and hence moral responsibility, is the concept of an *extrinsically unified, dependent concrete particular*.

Crucial to the practice of attributing moral responsibility to some individual is the requirement that the individual in question be the same individual that performed the action we are concerned about. So continuity through time is needed, and this implies diachronic possession of determinate identity. But this in itself does not tell us much, since what continues through time may only be a complicated set of relationships between psychological states. The concept of a person given by Parfit's psychological continuity criterion takes diachronic numerical identity to be inessential to personhood, and so is explicit about not requiring a single enduring biological organism, since possibly indefinitely many organisms could serve – *via* fission – as hosts for the psychologically connected selves.[263] And persons, united by relations of psychological continuity and connectedness, do not seem to be dependent on the mental activities of any cognizer, except in the trivial sense that there must be *some* cognizer having *some* psychological states in order for there to be a person. So persons on this account do seem relatively independent.

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[263] If, *per impossibile*, there could somehow be an unceasing flow of organisms such that the selves in question would never be in any given organism longer than an instant, a case might be made for the near-complete independence of persons from organisms, at least as far as rigid dependence is considered. But if fission always involves transplantation of (at least some significant portion of) a brain, it is not clear that the psychological continuity account completely avoids all biological dependence.

One remaining concern, however, is that if persons are indeed reducible to sets of relationships between psychological states over time, then it seems that the identity and existence of a person is rigidly dependent on those states and the relationships between them. Since, however, the states and relationships are in a sense constitutive of the person, this kind of dependence may be relatively harmless. To see why, recall the case of physical bodies, which turned out to be dependent entities in virtue of the necessity of conceiving of such bodies as mereological compounds (or at least in such a way that is not inconsistent with them being mereological compounds), and of the fact of the tight conceptual connection between the macro-level causal powers of such bodies and the particles that compose them. In the case of persons as identified by the psychological criterion, our intuitions about counter-factual situations are different from those driving us to say that two rocks, e.g. Lo and Bo from the hypothetical story discussed in footnote 256, could not be the same across worlds since Lo and Bo are necessarily identical[264] to the mereological compounds Lu and Bu. We can imagine a myriad of counterfactual situations in which a person (say, William Lyon Mackenzie King) who has certain psychological states between which certain relations hold in one world turns out in another world to have quite different psychological states, with different relations holding between them. Mackenzie King's life could have been different. Had there been available to him no crystal balls, Ouija boards or mediums capable of performing séances, a large number of Mackenzie King's experiences would have been different, and consequently instead of the memories and intentions formed on the basis of those experiences, he would have had others. But we would not, for all that, want to say that he was a different person.

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[264] If, in some possible world, the same mereological compound could have different causal powers, and so be a different rock, then the relation between Lu and Lo would not best be described as one of necessary identity but rather of one-way dependence: Lo's identity would depend on Lu's but not vice versa. Thanks to Dave DeVidi for pointing this out.

If this is right, it turns out that the sense in which a person (on the psychological continuity conception) is ontologically dependent on psychological states and the relations holding between them is not rigid, but only a variety of a generic dependence, in the sense that for a given person there must be some coherent and connected series of psychological states, but variance in the specific states making up the series is permissible, at least to some extent. Furthermore, the persons we are considering are all human beings as well. So it might be thought that a person must be ontologically dependent on some human organism. Yet it does not seem necessary to conceive of persons as human beings – or for that matter even to conceive of them in a way that is not inconsistent with being a human being – as it is necessary to conceive of rocks as mereological compounds. For this reason, the possibilities of thinking of animals, or perhaps even non-embodied beings as persons have been seen as live options to many. This goes to show an apparent conceptual freedom in regard to the notion of a person which we did not find in regard to the notion of a physical body.

As mentioned earlier, it is in terms of unity that the psychological continuity account differs most clearly from the narrative. Persons are, on the former story, unified by virtue of the relations that obtain between psychological states of selves at different times. But such relations hold independently of what any cognizer thinks about them; intuitively, at least, it is an objective matter whether or not self B remembers A's past experiences or is motivated by A's past intentions. So the individual-concept applicable to a person on the psychological continuity view is the concept of an *intrinsically unified, independent concrete particular.*

This conception of a person, however, gives rise to some counter-intuitive results. For both psychological continuity and psychological connectedness seem capable of holding, not only between earlier and later selves within the life of one person, but also between numerically distinct persons. Beliefs, intentions, and memories all seem to be shareable across persons, in the sense that it is possible that numerically distinct persons have identical beliefs and intentions[265] (if the identity of these attitudes are determined by their content) unless every belief or intention essentially carries a reference to the self of the one possessing the belief or forming the intention.[266] Relatedly, some moral theorists seem content to view various entities besides individual human beings as morally responsible agents. Corporations, for example, as well as nations, are both groups that seem to be moral agents, and thus persons, in their own right. If this is the case, however, our concept of a person will have a somewhat surprising extension. Still, since we are dealing with concepts designed to serve certain practical purposes, this might not be as problematic as it seems. Recalling that we have been considering the narrative conception of personhood as most relevant to the phenomenon of moral responsibility may serve to explain this odd result. And furthermore, the intuitive strangeness may turn out to result mainly from the fact that human persons are also (from another perspective) organisms, and are thus subject to other principles of unity and identity, while corporations and nations have quite different unity and identity conditions.

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[265] Shoemaker (2005).
[266] It might be argued that Harry's intention to go to the store has to be spelled out not as "I intend to go to the store" but as "I intend that I should go to the store," taking account of the indexicality of 'I'.

4.4 The Relevance of These Results

As noted at the end of the previous sub-section, the roles requiring appeal to an individual may require seeing the individual from different perspectives. For example, a dog could be taken as an organized living system for the purpose of certain biological explanations; while certain physical explanations (accounting for the depression made in the ground by the dog's falling body) would require seeing the dog as simply a certain compound physical individual; the fact that it is the locus of various life-sustaining functions would be irrelevant. But the important thing to take away from the discussion of this section is that the three individual-concepts we were able to isolate (four if the two applicable to persons are counted separately, and five if we count kind-instances) – each applicable to one of the classes of entities that we (*prima facie*) took our practices to demand conceptualization as objects – is distinct in significant ways from the others. Their scores on the various ontological dimensions are not all the same. Nevertheless, we have good reasons for calling each of these classes of entities (physical bodies, organisms and persons) kinds of ontologically robust or significant individuals, since each of them scores a '1' on at least some of the ontological dimensions. This result is significantly strengthened by recalling the motivating examples of numbers and mereological sums in 4.2, which also seemed to warrant membership in the family of ontologically significant individuals, in spite of the notable divergences between their ontological scores and the scores of the entities we would ordinarily think of as more object-like.

There remains a problem. I introduced the family resemblance account of concepts for types of ontologically significant individuals as a way of showing that, although the concept of an IICP seemed to be indispensible in view of our theoretical and practical commitments, it is not in fact

a single concept that is indispensible for all these purposes, but a number of distinct concepts, each of which involves its own combination of elements from the different ontological dimensions. But this account was also supposed to be a step toward resolving the tension that arose between the conclusion of Chapter Three, that we have no unproblematic general assay of objects, and the apparent indispensability of the concept of an object. How, we now have to ask, does the family resemblance account enable us to deal with the difficulty of the apparent failure of all the available ontological assays? I do not pretend to be able to completely resolve this issue here. However, I will offer a sketch of what I think is the right way to proceed.

Consider the Bundle Theory, according to which an object is a bundle of tropes united by relations of dependence into a foundation system which may or may not possess a core of essential (rigidly interdependent) tropes along with a periphery of accidental tropes. A major difficulty for Nuclear BT was its reliance on in-principle unspecifiable substantial parts for its account of the unity of macro-level tropes. Taking the family resemblance account of (ontologically robust or significant) individuals into consideration, we can notice that although the objection just mentioned holds in regard to physical bodies, since they are ontologically dependent on the atoms composing them, it cannot hold in regard to, say, mathematical individuals, which are obviously independent of any substantial (physical) parts. Organisms conceived of as functional units would be another candidate for an assay in the style of Nuclear BT. One of the key ideas of functionalism is that functionally defined states are multiply realizable. We can take this to entail that no appeal to any particular substantial parts would be required in giving a complete functional account of an organic system. When all the functional properties of an organism are specified, along with their interrelationships, the ontological

inventory for that individual would be complete, and so an assay in the style of Nuclear BT would not run into the objections it faced. In these cases, then, there would seem to be no obvious problem in giving a (sufficiently sophisticated) bundle theoretical assay. So although Nuclear BT cannot be construed as an overarching pattern for ontological assays of individuals of every kind, it can be a useful approach for entities falling under certain local individual-concepts.

At the level of the basic tropes, however, we saw that there was some difficulty in avoiding conceiving of these as bare particulars, due to the problem that any basic *nature* would have other features predicable of it (at the very least, simplicity, independence, additivity, unity) and would thus be complex and not in fact simple. The only way out seemed to be to say that at this level, something like the bare particularist account is correct, so that there are truly featureless entities to which the lowest-level tropes (including unity, simplicity, etc.) are tied (while not being rooted in them), and these are what give the basic natures their unity and numerical diversity, as a matter of primitive ontological fact. Of course we found conceptual difficulties in characterizing bare particulars as entities of this sort. But it may be the case that we have to acquiesce in the point Moreland made about the need to respond to dialectical pressures by postulating such entities, even if explaining how they can be the way they need to be in order to do what we want them to do for us is not fully graspable by us. Insofar as the phenomenon of numerical diversity seems to be an inescapable component of our experience of things, appealing to an ST-style assay as an instrument enabling us at least to show what is needed if we take the phenomenon seriously, might be the best we can do.

Another example of the approach I am suggesting would be a Non-Reductionist assay of the kind of individual needed to serve as instances of natural kinds. The main problem facing NRT was that its way of accounting for various phenomena by appeal to the primitive and unanalysable (if not wholly mysterious) instantiation of substance-kinds seems unsatisfactory, and at any rate no better than the ways of accounting for the same phenomena as the reductionist positions. As was shown in Chapter Four, however, the kind-property explanatory pattern does seem to indicate a kind of common practice we engage in, involving appeal to kinds, or to the essences of things by virtue of which they belong to their kinds (whatever kinds ultimately turn out to be), as explanatorily or even causally prior to the features of the individuals that are instances of those kinds.

Essences (if indeed we admit such things) give us a way of describing the core of what a given individual is that respects the macro-level unity of that individual, and thus seems resistant to a reductionistic assay into lower-level ontological constituents. In the case of a diamond, for instance, it is the crystal lattice-structure that binds the carbon atoms into a distinctive sort of unity that determines the diamond's refractive index, density, ability to cut glass, etc. But the possibility of essence-to-property causality of the sort demonstrated here seems to entail that, at least insofar as this practice is concerned, reductionist assays that make particular properties and/or substrata prior to the objects themselves have things backwards. And this seems to capture something of the charge leveled by non-reductionists that to see tropes and/or substrata as parts is a category mistake. So even if an NRT-style assay cannot explain how individuals are individuated or account for numerical difference between instances of kinds, it nevertheless

might serve as a useful tool for accounting for the sort of explanatory practice we have been considering here, if not others as well.

What remains to do is to investigate whether we can tell a similar story about how the key problems of one or another attempt to give a general theory of objects no longer apply to the restricted accounts of individuals we require for the various purposes I have enumerated, and others as well. It is beyond the scope of the current project to carry out this task in the detail it would require to be done well. What I have attempted to do here is to show that each of the ontological assays, though problematic from certain points of view, may also be useful given certain particular purposes. Just as we use different mathematical tools when approaching different kinds of scientific problems, perhaps we also need to take our collection of ontological assays as a sort of conceptual toolbox for dealing with local ontological issues. No good handyman would think that a hammer, of great use in carpentry, could serve as the fix-all tool in plumbing as well, and then criticize it when it does not function as well in that capacity and replace it with a wrench as the sole tool in his possession. Having gone pluralistic about objects (now construed as a multiplicity of individuals), we might also have to go pluralistic about the assays we employ for accounting for their various ontological aspects and for the various ontological issues that arise concerning them.

4.5 Conclusion of Chapter Four

The following table summarizes the results of my attempt to show how distinct individual-concepts are required by different practices (along with the results for other kinds of individual mentioned in the course of the discussion):

	Unity	Identity	Locatedness	Status	Repeatability
Physical Bodies	Intrinsic	Indeterminate	Concrete	Dependent	Particular
Organisms	Intrinsic	Determinate	Concrete	Independent	Particular
Persons (narrative egos)	Extrinsic	Determinate	Concrete	Dependent	Particular
Mereological sums	Extrinsic	Determinate	Concrete	Dependent	Particular
Mereological compounds	Intrinsic	Determinate	Concrete	Independent	Particular
Numbers	?	Determinate	Abstract	Independent	?
Quantum Particles	Intrinsic	Indeterminate	Concrete	Independent	Particular
Kind-Instances	?	Determinate	?	?	?

Table 3: Some Individual-Concepts

Not only is the conceptual schema I have been presenting flexible in such a way as to admit of interesting variations within the class of entities falling under one or another of the family-resembling individual-concepts, but the conceptual demands of the practices which made objects seem *prima facie* necessary in fact necessitate interestingly distinct concepts.

Appendix A

Suggestions for Further Research

So far, the "resolution" I offered to the tension between the *prima facie* importance of the concept of an object and the plausible view that no ontological account of objects is successful is little more than a suggestion. One way of carrying forward the project I have been outlining is to work out the details of, for example, a Bundle Theory assay for some sorts of individual, a Substratum Theory account for others, and a Non-Reductionist Theory approach for still others, along with a principled criterion and explanation of which account applies when.

Furthermore, I've only illustrated the approach in any serious way with three sorts of individuals (physical bodies, organisms and persons), though I have sketched how the approach might deal with some others. In addition to filling in these sketches, two important further questions are what other sorts of individuals could this method apply to, and what assays would be available for them? Artifacts are a particularly salient case, given all the ink that has been and still is being spilled over them in metaphysics. Again, I presented only a handful of "object-requiring" practices. What other practices or kinds of practices are relevant to the concepts of the various kinds of individuals we will end up with on a complete examination? Obviously, there is much work remaining to get this project off the ground.

If this story I have been telling is right, we should also expect to be able to draw important implications for debates like the one canvassed at the end of Chapter Two. I noted that it is my view that this debate is ill-conceived, in that what is really at issue between van Inwagen,

Wiggins, and Hoffman and Rosenkrantz (and those sharing the views they represent) is not the *existence* of various disputed sorts of individuals (from one perfectly good point of view it would be insane to call their existence into question), but whether such individuals are in fact objects, in the sense given by (something like) the concept of an intrinsically unified, independent concrete particular. Once this is seen, the way is opened up for a philosophical middle ground which preserves the kernel of truth in each of the opposing positions.

The main point at issue in the debate just mentioned concerned artifacts. But there are similar disputes all over metaphysics – people debate the reality of moral facts and properties, of the posits of theoretical physics, of beliefs and intentions, etc. I think the approach I have been advocating here has connections with the kind of position Crispin Wright has developed, in *Truth and Objectivity* and elsewhere, according to which realism or antirealism concerning the individuals of a given domain of discourse depends, among other things perhaps, on the width of cosmological role accorded to those entities. I have mentioned one area with connections to the kind of work I have been engaged in here; there are others as well. Debates about reductionism and supervenience could also be informed by an ontological perspective like the one I have been describing. Following through on such connections is another project I hope to be able to engage in the future.

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