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I. Introduction: From Ontology to Metaontology

a. First-Order Ontological Debate
Ontology, as a field of inquiry, concerns existence. When we speak of what exists it is natural to use 'objects' as a fundamental unit. Thus, in ontology, questions about the nature of objects are of great importance. One such question contemporary ontologists grapple with is: "Are there composite objects?" meaning, objects which are composed of, but are not identical to, their constituent parts. Proposed answers to this question are part of first-order ontological debate. In order to lead us to an understanding of second-order ontological debate, or metaontology, let us first briefly discuss the composition debate.

Consider a possible world containing two chairs and nothing else. In the material composition debate, ontologists disagree as to how many objects exist in this world. Some say that in addition to the two chairs, this world contains a third object which is jointly composed by the two chairs. These mereological universalists propose that *any* two objects, regardless of whether they are in any way similar or causally-related, *always* jointly compose a third distinct object. By contrast, others deny that there are any chairs at all in this world. These 'mereological nihilists' propose that the only things that exist are *simples*—presumably indivisible subatomic particles—which may be arranged 'x-wise' (Sider pp. 384). For instance, in this possible world the nihilist would say that there are only 'simples arranged chair-wise'.

Some find it suspect that mereological universalism and mereological nihilism are taken to be serious theories of composition, as both seem to have highly counterintuitive implications. On the nihilist account, the sentences: 'Human beings

exist,' 'There are tables,' and 'My shoe is an object' are, strictly speaking, all false. On the universalist account, the twelfth page of the first printed copy of Quine's "Two Dogmas of Empiricism" along with the front brake on my bicycle jointly compose a distinct object. Both of these consequences conflict with our commonsense intuitions about objects[1].

Yet, as Ted Sider argues, today's ontologists are not in the business of doing conceptual analysis of commonsense sentences such as "Chairs exist" (Sider pp. 385). Rather, their aim is to "carve nature at its joints" by attempting to describe the world *as it really is*. Whether or not the most accurate description accords with our ordinary usage of terms such as 'object' and 'exist' is largely irrelevant to ontological inquiry.

Still, some such as Hilary Putnam argue not just that these ontological theories are counterintuitive, but that the very questions that they aim to answer cannot have objective and determinate answers independent from what he calls *conceptual schemes*. Further, he argues that choice of a conceptual scheme is purely pragmatic.

b. Metaontological Debate

If the fundamental question of ontology is, 'What exists?', we can say that the fundamental question of metaontology is then: 'Are there objective and determinate answers to ontological questions?' There are two basic sides one can take in this metaontological debate. We can call those who think there *are* objective and determinate answers to ontological questions, such as Sider, *ontological realists*, and those who deny that there are objective and determinate answers, such as Putnam, can be called *ontological anti-realists*[2]. Note that it is possible to be an ontological realist with regard to some entities, while being an anti-realist about others. For instance, one may hold that there *is* a determinate answer as to whether natural numbers exist while also holding that there cannot be an objective and determinate answer to composition question. In this paper I focus on ontological realism and anti-realism, as I have defined them, only with regard to the composition debate.

In the composition debate, universalists and nihilists both assume that ontological realism is the case. In a sense, it seems that they *must* assume this if they are to take their own accounts of objecthood seriously. Ontological anti-realists, on the other hand, tend not to take universalist and nihilist accounts of objecthood so seriously. Anti-realists argue that realists are not justified in assuming that there is an objective and determinate answer to the composition question.

In this paper, I frame the debate between the ontological realist and anti-realist around the problem of material composition. I delineate some of the major moves and motivations for both sides, then I offer a defense of anti-realism and point out what I see as weaknesses in the ontological realist's position. In order to contextualize my own view I first present Hilary Putnam's anti-realist thesis of *Conceptual Relativity* as it

pertains to the metaontological debate concerning composition. I then introduce a few of Ted Sider's arguments for realism that respond directly to Putnam's thesis. Then, I present David Chalmers' challenge to Sider's brand of realism and give Sider's response.

II. Ontological Realism and Anti-Realism

a. Linguistic Confusion and Conceptual Relativity

Some ontological anti-realists suggest that the disagreement between first-order ontological theories is based on some manner of linguistic confusion. Once the confusion is clarified, presumably the disagreement will become trivial or dissolve. Hilary Putnam follows this line of argument in his thesis of *Conceptual Relativity*. On this view, the universalist and nihilist are not in meaningful disagreement because they are equivocating on the meaning of the words 'object' and 'exist' (Putnam pp. 20). In Putnam's terms, they are operating using different conceptual schemes.

Take again the world containing only two things; this time, two *simples*. According to the universalist's conceptual scheme there are three objects, and according to the nihilist's conceptual scheme, there are two. Since both universalist and nihilist conceptual schemes are presumed to be internally consistent, Putnam holds that both yield "correct" answers regarding how many objects exist *relative* to their different conceptual schemes. Putnam suggests that neither conceptual scheme is more *correct* than the other (Ibid.). That is, neither conception stands out as the best, or most accurate, tool for depicting the world *as it really is*.

Putnam claims that it is impossible to give an answer as to how many objects exist independent of *all* conceptual schemes. Any answer given must be relative to a conceptual scheme just in virtue of being stated in a language. This is because each conceptual scheme dictates particular definitions for the words 'object' and 'exist'. It is from such definitions that we are able to give determinate answers about how many objects exist. Such definitions, Putnam says, cannot be found in the very structure of the world. Rather, they come from our own *concepts* of the world (Ibid.). Since we have several legitimate, or consistent, conceptions of 'object' and 'exist', such as those employed by the nihilist and universalist, Putnam thinks we can give multiple different, and yet equally "correct" descriptions of the world containing two simples. To sum up: by Putnam's reasoning, there is not *a single objective and determinate answer* as to how many objects exist.

b. Equivocation of 'Object'

Sider thinks that Putnam's line of thought is misguided. He argues that the disagreement between the nihilist and universalist is not simply due to equivocation of terms. These next two sections examine Sider's arguments that the universalist and nihilist share the same sense of 'object' and 'exist' in turn. In order to show that the

nihilist and universalist do not equivocate on the meaning of 'object', Sider constructs a sentence in first-order logic describing how many objects exist in a world containing two simples without using the term 'object'. He shows that the nihilist and universalist still disagree about the truth value of the sentence. Thus, he reasons, their disagreement must not stem from differing senses of 'object'. Sider's logical sentence is as follows (Sider pp. 390):

$$\exists x \exists y \exists z (x \neq y \, x \neq z \, y \neq z)$$

In the world containing only two simples, let us call the first simple x, and the second simple y. Sider's sentence then says of the world with two simples there exists a third thing z which is neither identical to x nor to y. Mereological universalists say that this statement is true of the world containing two simples. There is an object z that is jointly composed by x and y. Mereological nihilists say that this sentence is not true of the world containing only two simples. Since simples are the only things that exist, there are only two objects.

As Sider explains, his logical sentence "contains only quantifiers, truth-functional connectives and the identity predicate. There is clearly no equivocation on the truth functional connectives or the identity predicate." (Ibid.). Thus, Sider concludes, the only plausible remaining source of disagreement is the existential quantifiers. In the next section I discuss Sider's argument that the existential quantifiers are *not* the source of the disagreement.

As a brief aside before moving on, it should be noted that this argument is perhaps not as strong as Sider supposes. The anti-realist can respond saying that the universalist and nihilist clearly *do* have different definitions of 'object'. The nihilist defines 'object' as a simple while the universalist defines 'object' as any sum of physical material, whether spatio-temporally contiguous or not. Furthermore, their differing definitions are exactly why they give different answers as to the truth value of Sider's sentence. Their definitions of object cause them to quantify over different domains. The universalist quantifies over a domain of mereological sums, while the nihilist quantifies over a domain simples.[3] Whether Sider's argument is effective or not, both realist and anti-realist have turned the debate toward talk of existential quantification – hence the following section.

c. Absolute Existential Quantification
Sider argues, counter to Putnam, that the universalist and nihilist share the same basic concept of 'existence.' Both take 'existence' as primitive. Whether or not something exists in the most fundamental sense is just a matter of brute fact. This brute sense does not vary depending on convention or language choice, because no definitions are at play. The concept is indefinable. To motivate this claim, realists point out that attempts to analyze existence inevitably result in simply restating the word 'exists' or some

analogous term. If 'exists' is primitive, the realist presumes that he cannot, and need not, give any further explanation of the term.

By Sider's reasoning Putnam mistakes the nihilist and universalist's ontological existence assertions for ordinary existence assertions[4]. If the layman were asked how many objects are in the room, he'd likely respond: 'what do you mean by object?' His answer would very much depend on how 'object' is defined. Sider argues, however, that the answer the ontologist gives should not be construed as depending on how 'object' is defined. This is partly because in addition to taking 'existence' as brute, realist also takes 'object' as brute. That is, the realist believes that "the world's distinguished structure includes quantificational structure" (Sider pp. 407). To him, how *many* objects exist is also a matter of brute fact. A fact with which the ontologist should be fundamentally concerned.

After all, the ontologist seeks to understand what sorts of objects exist at the most fundamental level. Thus, Sider reasons, only the most fundamental sense of 'existence' and 'object' – the brute senses – are appropriate for inclusion in ontological theory. Because of this, the domain that the ontologist quantifies over should be thought of as an *absolute domain*, or a domain that includes everything which exists in the brute sense (Sider pp. 412). To quantify over an absolute domain, Sider recognizes that the ontologists needs an *absolute existential quantifier*.

To prevent having his ontological existence assertions conflated with ordinary existence assertions Sider creates a new language that he deems most appropriate to ontological inquiry. In this language, which he dubs *Ontologese*, both 'existence' and 'object' are taken as brute, and the existential quantifier ranges over an absolute domain. Of course, stipulating that objects exist in a brute sense does not tell us anything about the nature of the objects within the absolute domain; hence there being a diverse variety of composition theories. Both the universalist and the nihilist attempt to tell us the best way of understanding objects. As I understand it, the reason realists are adamant about taking 'existence' and 'object' as brute is that if we think of the definitions of 'existence' and 'object' as dependent on choice of conceptual scheme, the nihilist and universalist can no longer be thought of as aiming for absolute truth in their theories. This is exactly where the anti-realist wants to push the realist.

d. David Chalmers' Objection to Absolute Quantification

Sider argues that ontologists *can*, or at least *should*, allow themselves to theorize as if they can quantify over an unrestricted domain using the *Ontologese* sense of 'exist'. Anti-realists such as David Chalmers argue that the unrestricted *Ontologese* quantifier is defective in some way, so ontologists *should not* allow themselves to conduct ontological inquiry as if they were able to quantify over an unrestricted domain (Chalmers 102). To this effect, Chalmers presents the following challenge to the realist (Chalmers 105):

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1. Logic gives a semantics for the existential quantifier.
2. This semantics only tells us how to evaluate quantified statements in a *model*.
3. For assertions of quantified statements to have a truth value, we have to evaluate them at a *world*.
4. Worlds are not models (stipulation).
5. Thus, the semantics of existential quantification does not yield a truth-value for quantified statements at worlds.

Chalmers explains that we can evaluate quantified statements in a model because its structure serves as a built-in domain – "the domain of everything that exists with respect to that model" (Ibid.). He suggests that "[w]orlds, on the other hand, do not obviously come with built-in domains" (Ibid.). By their very nature, models abstract from the world in the same way that maps abstract from the world. This is what gives them a determinate domain for us to quantify over. This is also what makes them informative. Worlds do not abstract from themselves, whatever that would mean. So, it is unclear whether we can say the world actually has a built-in domain for us to quantify over. Thus it is unclear whether the absolute existential quantifier can really do what the realist wants it to do, namely, to quantify over all of the objects that objectively exist.

For the conclusion of Chalmers' argument to follow from its premises we must assume that the world does *not* come equipped with an absolute domain. However, Chalmers does not provide a positive argument for why we should believe that is the case. Instead, his argument is meant only to corner the realist into committing himself to a strong metaphysical claim about the structure of the world. The realist *must* claim that the world is fundamentally structured in a way that gives ontologists a definite and unrestricted domain to quantify over. In other words, the realist must give an argument that part of the world's objective structure is its quantificational structure. Chalmers pressures the realist into giving a convincing argument in favor of this strong metaphysical claim. Sider takes on this challenge. The next section discusses some of his arguments for his brand of realism.

e. Quantificational Structure
Sider argues that we ought to believe in an objectively structured world. To support this claim he calls to mind Goodmanian skepticism about objective similarity. He reads Nelson Goodman as claiming that when we say two things are similar, their apparent similarity is never due to some objective similarity in the world. Rather, it is due only to the ways in which we choose to group things. As Goodman says, "Repetition as well as identification is relative to organization. A world may be unimaginably heterogeneous or unbearably monotonous according to how events are sorted into kinds" (Goodman pp. 9). When we group things by similarity into categories such as 'species', 'sub-atomic particles', 'red things', 'things made of plastic', 'places visited

by US presidents on vacation' etc. we're not picking out objective similarities in the world. We are merely imposing our own conventional groupings onto the world.

Sider argues that some groupings clearly carve nature at the joints better than others. To show this, he calls upon David Lewis' distinction between 'natural' and 'unnatural' properties and relations (Lewis pp. 346-7). Lewis takes 'naturalness' as primitive. A natural property, he says, picks out objective similarity in the world, while an unnatural property picks out stipulated or conventional similarity. For instance, 'Things which have been within five miles of the Canadian border' share an unnatural property, while, 'things made of H_20' share a natural property. The latter reflects objective structural similarity found in the world rather than in our concepts. It is one thing to claim that 'things that have been within 5 miles of the Canadian border' have no objective similarity. But if Goodman wants to say that all similarity is relative to the ways we choose to group things, he has to deny that 'things made of H_20' are objectively similar. Sider finds this absurd. The world *must* have an objective structure!

III. Concluding Remarks

a. Physics or Metaphysics?

In response to Sider's argument, I suggest that no sensible anti-realist[5] denies that there is objective similarity in the world. But, admitting that there is objective similarity in the world is not sufficient to justify Sider's claim that part of the world's objective structure is its quantificational structure. To back this claim Sider defers to the sciences. He reasons that scientists have to assume that things in the world are quantifiable in order to get anything done. Quantification is indispensible to the sciences. So, Sider thinks, if we are to get anything done in ontology we should take on the scientist's assumption in the composition debate as well.

However, metaphysicians are *not* physicists. The ontologist should not pretend to be a scientist. Note that neither universalist nor nihilist composition theories can be empirically tested. If we have two objects we cannot simply observe them to find out if they have fused to compose a third object. So what justification does the realist have for relying on the scientist's assumption? I'm inclined to think that the scientist is justified in his assumption because science has many important applications, in medicine, astronomy, architecture *etc.* Composition theories on the other hand don't seem to have *any* practical application. Thus, I find appeals to the indispensability of quantification unconvincing.

b. Frames of Reference

I suggest that the realist should not be so quick to reject the idea that perhaps the universalist and nihilist *are* both right, as Putnam suggested, and are merely representing the world correctly from different frames of reference. Consider a wooden table. From a macroscopic level the table is solid, yet from a microscopic scale the table

is mostly empty space. We may say the table is both solid and mostly empty space without contradiction as long as we specify the scale under consideration. It seems plausible to view the composition problem in a similar light. From a sub-atomic scale, perhaps the nihilist is right that objects are just 'simples arranged x-wise', and from a macroscopic level, perhaps the universalist is correct to assert that any portion of matter – any mereological sum – can be called an object. However, I doubt that composition theories thus construed give us deep metaphysical or practical truths.

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[1] There are intermediate views, or "special composition" views, which seem to avoid both of these problems. However, these sorts of views run into problems concerning vagueness, which lie beyond the scope of this paper to discuss. For the purposes of this paper I leave special composition aside.

[2] I am not using 'anti-realist' to imply a disbelief in the existence of a mind-independent world.

[3] Sider anticipates this move, and provides a counterargument in his article entitled "Ontological Realism". However, it would take us too far astray to address here. I will just say that it is certainly not impossible for the anti-realist to give a plausible rejoinder to Sider's counterargument.

[4] This is a distinction analogous to Carnap's distinction between internal and external questions (Carnap 1950). Loosely speaking, internal questions concern a stipulated but definite domain (framework) of entities whereas external questions concern whether, and what sort of, entities exist in a fundamental sense. Similarly, ordinary existence assertions assert the existence of stipulated or conventional entities,

while ontological existence assertions purport to assert the existence of the most fundamental entities. One need not accept the fine machinery of Carnap's distinction to follow Sider's line of argument.

[5] I personally doubt that even Goodman, as hardcore a relativist as he is, would deny that there is objective similarity in the world.