THESIS

ONTOLOGICAL DEFLATIONISM: PLURAL QUANTIFICATION,

MEREOLOGICAL COLLECTIONS, AND QUANTIFIER VARIANCE

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ABSTRACT

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One criticism by deflationists about ontology is that ontological debates about composite material objects are merely verbal. That is, there is only apparent disagreement between the debating ontologists. In responding to such a deflationist view, Theodore Sider (2009) has argued that there is genuine disagreement between two ontologists concerning the ontological status of tables. In doing so, Sider has written that, using plural quantification, a mereological nihilist can grant the proposition 'There exist simples arranged tablewise' while denying the proposition 'There exist collections of simples arranged tablewise'. In the first chapter, I argue that Sider's response to the deflationist is unsuccessful for two reasons. The first is that plural quantification is not ontologically innocent. A semantic interpretation of a logical formula involving plural quantification will reveal a problematic locution, namely, 'one of them' where 'them' has a collection as its referent. The second concern with Sider's response is that the predicate 'arranged tablewise' is collective rather than distributive. A collection is needed to instantiate a collective predicate; thus, a commitment to simples arranged tablewise entails a commitment to a collection of simples arranged tablewise.

In responding to the ontological deflationist, Sider discusses a debate between David Lewis and Peter van Inwagen about the existence of tables where a table is interpreted as a collection of simples arranged tablewise. As part of his discussion, Sider claims that Lewis and van Inwagen agree on what counts as a table. Sider allows that the deflationist may have three candidate interpretations for what counts as a 'table', but none will support the deflationist conclusion. In the second chapter, I address each candidate interpretation: (1) using Composition as Identity - a table is simples arranged tablewise, (2) a table is a set-theoretic collection of simples arranged tablewise, and (3) using Unrestricted Composition - a table is a mereological collection of simples arranged tablewise. I argue against Lewis's argument for Composition as Identity and defend an argument by Sider in support of Unrestricted Composition. Thus, I argue that composition is unrestricted and not ontologically innocent. In doing so, I show that van Inwagen cannot grant 'There exist simples arranged tablewise' and deny the existence of tables. Thus, I show that, independent of plural quantification concerns, Sider is not successful in refuting the deflationist conclusion that the ontologists are equivocating on the word 'table'.

Finally, in the third chapter, I address Sider's response to the deflationist claims that the ontologists are equivocating on the quantifier 'there exists'. I look at Sider's presentation of the argument and his response which centers on an appeal to naturalness. Relying on Eli Hirsch's defense of quantifier variance, I show that the deflationist position can be maintained if Sider's appeal to naturalness is rejected. Additionally, I argue that Sider's constructed ideal language, Ontologese, does not allow Sider to avoid the deflationist criticisms. I also address the question of whether or not the deflationist

program applies not only to ontological debates, but also to meta-ontological debates. To that end, I evaluate Gerald Marsh's (2010) meta-meta-ontological discussion in which he defends a dilemma for the Hirsch-Sider debate. I argue that Marsh's defense of the dilemma is problematic, and highlight a wider concern I have about meta-meta-ontological debates. I suggest that there is a frame of reference problem and end with the skeptical conclusion that answers at the meta-meta-ontological level are dependent on the language used to frame the debate.

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CHAPTER ONE: ONTOLOGICAL INNOCENCE OF PLURAL QUANTIFICATION

I.I – Ontological Debate about Composite Material Objects

Theodore Sider has recently published an article defending ontological realism against the deflationary claim that ontological debates are not substantive (Sider 2009). In this chapter, I will critically evaluate one of the arguments that Sider uses in responding to what I call the deflationist argument from equivocation. In doing so, I will evaluate the ontological commitments of plural quantification and collective predication. To begin, I will briefly present the motivation for the deflationist position.

Deflationary concerns seem to result from the very nature of many ontological debates. One category of deflationist concerns stems from the view that certain ontological debates are trivial or shallow. Eli Hirsch, while defending his position he calls "ontological shallowness," writes:

> Look at your hand while you are clenching it, and ask yourself whether some object called a fist has come into existence. As shallow ontologists the first thought that must come to mind when we ask this question is this: *There can't be anything deep or theoretical here*. (Hirsch 2002, 67; Hirsch's italics)

For Hirsch, debates concerning the existence of a fist are not substantive, and the questions seem to have an obvious answer. In explicating the view that ontological debates are not substantive, Hirsch argues that "many familiar questions about the ontology of physical objects are merely verbal. Nothing is substantively at stake in these questions beyond the correct use of language" (Hirsch 2005, 67).

In contrast to the deflationist, Sider considers the ontological debate about physical objects to be deep and significant. To address deflationist concerns, Sider chooses to evaluate an ontological debate concerning composite material objects. One might call Sider an "ontological realist" in the sense that he thinks this and other ontological debates are substantive, and that "…the contemporary ontologists are approaching these questions in essentially the right way" (Sider 2009, 386). For Sider, the ontologists debating about composite material objects are trying to get at relevant facts about the world, and the answer to the debate is relevant and meaningful.

Before looking at the specific debate that Sider has in mind, I want to introduce my labels for the debating ontologists. For the two opposing views on the ontological status of composites, I will adopt the labels used by Peter van Inwagen and David Chalmers in their discussions on the matter: *nihilism* and *universalism*.[1] My usage is succinctly characterized by Chalmers as follows: "Given two distinct entities, when does a mereological sum of those entities exist? The universalist says always, while the nihilist says never" (Chalmers 2009, 77). Sider on the other hand, labels the debating ontologists with the initials of David Lewis (DL) for the universalist, and the initials of Peter van Inwagen (PVI) for the nihilist.[2]

For a paradigmatic case of an ontological debate about composite material objects, Sider focuses on the debate between two ontologists concerning the ontological status of a table. The debate is centered on the question: Do tables exist if there are some

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[1] Chalmers (2009), van Inwagen (1990)

[2] My nihilist represents a stronger position than Sider's PVI. van Inwagen grants composites if the composite forms a living thing, but denies composites otherwise. Sider recognizes this and in a footnote writes, "Let us imagine that, unlike Peter van Inwagen, PVI rejects the existence of composite living things" (Sider 2009, 389: fn. 17). Thus, to simplify matters, I am adopting more generic labels rather than using the initials of these philosophers.

particles arranged tablewise? The nihilist says no and the universalist says yes. That is, if there are some particles arranged tablewise, the nihilist will claim that a table does not exist while the universalist will claim that a table does exist. The deflationist will say that the debate is not meaningful or substantive. For example, Hirsch would say this debate is merely verbal. Sider presents the deflationist position as follows: "when some particles are arranged tablewise, there is no 'substantive' question of whether there also exists a table composed of those particles… There are simply different—and equally good—ways to talk" (Sider 2009, 386).

Now if the debate is trivial, then the deflationist must give reasons why these ontologists are so confused. The deflationist must provide cogent argumentation for the view that the ontological debate about composite material objects is not substantive. To that end, Sider argues that the deflationist only has two options for claiming that the debate is not substantive: "they [ontologists] must mean something different by the predicate 'table' or by the quantifier 'there exist' (or by both)" (Sider 2009, 387).

If the debate is the result of different interpretations of the word 'table', then the ontologists are talking past one another and the debate is merely verbal. If the debate is trivial because of the existential quantifier, then the deflationist position involves "quantifier variance" which is a deflationist thesis that Sider also addresses in his article. However, to defend his position, Sider must refute both deflationist arguments. In this paper, I want to address some concerns I have regarding Sider's response to the deflationist claim that the ontological debate is merely verbal because the ontologists are equivocating on the meaning of 'table'. That is, I will address Sider's response to what I call the deflationist argument from equivocation.

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I.II – Sider on Predicate Equivocation

Before evaluating Sider's response, I want to look closely at Sider's presentation

of the deflationist argument from equivocation. To begin, Sider writes:

> PVI [nihilist] denies the sentence 'There exist tables' while admitting that there do
> exist simples arranged tablewise (Sider 2009, 388).

Here Sider is presenting the nihilist position. The nihilist will grant the proposition 'There

exist simples arranged tablewise' and deny the proposition 'There exist tables'. Next

Sider provides the definition of 'table' that is seemingly in use:

> But 'table' just means a collection of simples arranged tablewise. That's what *I*
> mean by 'table', anyway; and presumably that's what DKL [universalist] means
> by it as well (Sider 2009, 388).

Sider is presenting the definition of 'table' that both the nihilist (Sider's PVI) and

the universalist (Sider's DKL) are presumably using. That is, the noun 'table' has by

definition the same meaning as the noun phrase 'collection of simples arranged

tablewise'. Sider continues:

> Given this meaning of 'table', it is true by definition that if there exist simples
> arranged tablewise then 'There exists tables' is true (Sider 2009, 388).

The idea is that if one accepts this definition of table, then one cannot consistently grant

the proposition 'There exist simples arranged tablewise' and deny the proposition 'There

exist tables'. That is, given that a table is defined as a collection of simples arranged

tablewise, then a commitment to the proposition 'There exist simples arranged tablewise'

entails a commitment to the proposition 'There exist tables'.

However, the nihilist denies the proposition 'There exist tables' while granting the

proposition 'There exist simples arranged tablewise'. For the deflationist, this is logically

contradictory unless the nihilist and universalist are employing different meanings for the

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word 'table'. Thus, the deflationist concludes that the ontologists are equivocating on the meaning of the word 'table'. Sider provides the deflationist conclusion as follows:

> So PVI's rejection of 'There exist tables' must be due to his meaning something different by 'table' (Sider 2009, 388)

Let me offer an interpretation of the deflationist argument from equivocation that I hope will make this argument more perspicuous. I will start by defining three propositions (P1, P2, and P3) and one definition (D1):

P1: There exist tables.

P2: There exist simples arranged tablewise.

P3: There exist collections of simples arranged tablewise.

D1: x is a table $=_{df}$ x is a 'collection' of simples arranged tablewise (Sider 2009, 388)

Given these propositions and definition, the deflationist begins by claiming that a commitment to P3 and D1 entails a commitment to P1. Since the nihilist rejects P1, the deflationist concludes that the ontologists must disagree on the definition of 'table'. This is the deflationist argument from equivocation. The deflationist argues that the nihilist and universalist are employing different meanings of the word 'table'; hence, the debate about the ontological status of a table is trivial because the debate rests on an equivocation.

The deflationist argument from equivocation turns on the claim that the ontologists disagree on the definition of 'table'. Sider's response is that the ontologists accept the definition, but disagree on whether something meets the definition. That is, the nihilist is not committed to the existence of a table because the nihilist will not grant P3. The nihilist will only grant P2. Both the nihilist and universalist accept that a table is

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defined as a collection of simples arranged tablewise, but they disagree on whether there

exists a *collection* of simples arranged tablewise. Sider argues that the universalist will

grant the existence of a collection of simples arranged tablewise, but the nihilist will not.

The nihilist will only grant the existence of simples arranged tablewise. That is, the

nihilist will grant the proposition 'There exist simples arranged tablewise', and deny the

proposition 'There exist collections of simples arranged tablewise.' Thus, for Sider, the

debate is genuine and centers on the existence of a collection of simples arranged

tablewise. Sider writes, "They [ontologists] agree on the condition ϕ that a thing must

meet in order to count as a table; their disagreement is over whether there exists anything

that meets that condition" (Sider 2009, 388).

Sider argues that, for the existence of a table to follow logically from the

definition, one must also accept the existence of a *collection* of simples arranged

tablewise. However, the deflationist could respond to Sider by arguing that the meaning

of 'collection' is such that the nihilist cannot deny their existence while admitting simples

arranged tablewise. That is, given a certain understanding of 'collection', the deflationist

will view a commitment to simples arranged tablewise as requiring a commitment to a

collection. If that is the case, and the ontologists agree on the definition, then the

deflationist could argue that the proposition 'There exist simples arranged tablewise' is

synonymous with the proposition 'There exist tables'. Sider anticipates this retort and

offers a brief response. It is with Sider's response that I have some concerns.

I.III – Nihilist's Use of Plural Quantification

Sider briefly addresses the notion of 'collection' the ontologists have in mind so that he can show the debate is about the existence of a collection rather than the result of equivocating on the meaning of the word 'collection' in the definition of 'table'. To do this, Sider begins by claiming that the notion of 'collection' used in the ontological debate only has two plausible meanings: mereological and set-theoretic. If neither meaning of 'collection' in the definition of 'table' secures synonymy between the propositions 'There exist tables' and 'There exist simples arranged tablewise', then the deflationist argument from equivocation fails. Further, Sider argues that the word 'collection' cannot simply be dropped from the definition because "in that case the definition is ungrammatical: 'x is a table iff x is simples arranged tablewise' (Sider 2009, 389). Hence, 'collection' cannot be eliminated, and its meaning must be either mereological or set-theoretic.

Sider dismisses the set-theoretic notion, claiming that the universalist does not have a set-theoretic notion in mind. Sider writes the following:

> …it's clear that DKL does not mean by 'table': set-theoretic collection of simples arranged tablewise… When DKL says that there are tables, he is clear that he means: there are things whose *parts* are simples arranged tablewise. (Sider 2009, 389)

For Sider, this leaves only a mereological interpretation. I should note that Sider's interpretation of a mereological collection is not one of unrestricted composition.[3] For Sider, a mereological collection is one in which the whole and parts share a particular property. Sider writes the following:

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[3] I have in mind David Lewis's understanding of unrestricted composition, "whenever there are some things, no matter how many or how unrelated or how disparate in character they may be, they have a mereological fusion" (Lewis 1991, 7)

> …the interpretation of 'collection' under which DKL's 'table' is plausibly taken
> as meaning 'collection of simples arranged tablewise'… is mereological: a
> 'collection' of things that ϕ is a thing whose *parts* ϕ. (Sider 2009, 388)

With the meaning of 'collection' understood as mereological, Sider provides

argumentation to explain how the nihilist can grant the proposition 'There exist simples

arranged tablewise', and yet deny the existence of collections. Sider indicates how he

thinks the nihilist can do this in the following:

> To be sure, he [nihilist] admits simples arranged tablewise (here I quantify
> plurally), but he rejects the existence of (mereological) *collections* of them (Sider
> 2009, 388: brackets mine).

This brief assertion is all Sider provides to defend his position. That is, a position

where a nihilist can, using *plural quantification*, grant the existence of simples arranged

tablewise and not be committed to the existence of a collection of simples arranged

tablewise. I am highlighting Sider's use of plural quantification because I think such a

notion warrants more than a quick parenthetical remark. My concern is that, using plural

quantification, the nihilist *will* be committed to something more than simples arranged

tablewise. Exactly what that commitment entails is what I want to discuss.

In short, the nihilist uses plural quantification as a way to quantify over the

existence of simples arranged tablewise without being committed to anything over and

above the simples. This claim tacitly assumes that plural quantification is ontologically

innocent. In this case, to be ontologically innocent means to be able to quantify over

simples in a tablewise arrangement without being committed to something more than one

is already committed to. Sider is claiming that using ontologically innocent plural

quantification, the nihilist can grant 'There exist simples arranged tablewise' without

being committed to a collection. The question that Sider needs to address is: Is plural

quantification ontologically innocent? If plural quantification is not ontologically

innocent, then this is a problem for Sider's response. I turn now to an analysis of plural quantification and its ontological commitment.

I.IV – Ontologically Innocent Plural Quantification

   Plural quantification is a topic associated with second-order logic; thus, to address plural quantification I need to briefly discuss second-order logic. This is best done by comparing second-order logic to the more common first-order logic. Consider the following example:

   (1)   Some rebels are scientists.

A first-order interpretation of (1) would be:

   (1′) $\exists x(Rx \,\&\, Sx)$

(1′) can be read as: There exists an x such that x is a rebel and x is a scientist. Here the scope of the existential quantifier ($\exists x$) is the well-formed formula ($Rx \,\&\, Sx$). If I restrict the universe of discourse to all people, then x is a variable that ranges over all people. In a first-order system, x will take as a value some individual person. When instantiated, (1′) predicates 'rebel' and 'scientist' onto some *individual* person. Hence, a first-order quantifier is so called because it can only quantify over individuals rather than, for example, properties of individuals. Accordingly, a reading of the first-order existential quantifier is 'There exists an individual x such that…'.

   In first-order logic the noun 'individual' is commonly dropped from the noun phrase 'an individual' leaving only the indefinite article. Thus, the first-order existential quantifier is typically read as 'There exists an x such that…'.This is unproblematic until

one needs to quantify over something other than an individual thing. A widely used example of a sentence that requires quantifying over something other than an individual is the Geach-Kaplan sentence:

(GK) Some critics admire only one another.[4]

(GK) seems to require quantification over at least a pair of critics. This pair of critics or plurality of individuals needs to be accounted for when symbolizing (GK). Moreover, an appropriate symbolization of (GK) should capture two important relational properties. The critics being talked about are such that they do not admire themselves, but rather admire one another. Secondly, these critics admire *only* one another; thus, do not admire any critic that is not one of them.

There have been two general approaches to translating the Geach-Kaplan sentence into a formal system. The traditional view, associated with Quine, is to paraphrase the sentence into first-order logic with the introduction of sets or classes.[5] An alternative view is offered by George Boolos in which plural quantification allows symbolizing (GK) without introducing sets.[6] I will evaluate Quine's account first, since Boolos's account can be viewed as a response to Quine.

Quine offered a simple solution to translating the Geach-Kaplan sentence. What seems like a requirement to quantify over something more than an individual can be remedied by forming an individual set of the plurality and using a first-order quantifier to

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[4] See Quine (1972, p.238) and (1973, p. 111)

[5] See Quine (1972)

[6] See Boolos (1984) and (1985)

quantify over the individual set. Hence, Quine's dictum that higher-order logic is, "set theory in sheep's clothing" (Quine 1986, 66)

Quine used the Geach-Kaplan sentence to demonstrate the utility of his system of first-order logic with the introduction of classes. Quine invokes classes or set theory as a way of analyzing the Geach-Kaplan sentence in terms of a first-order system. Quine writes:

> A new example of the power gained by quantifying over classes has been proposed by Geach and… Kaplan has proved that we cannot express this using just identity and the terms 'critics' and 'admire' and truth functions and quantification over persons (Quine 1972, 238).

Quine is admitting that the Geach-Kaplan sentence cannot be rendered first-order without the addition of set theory. Accordingly, Quine translates (GK) using an existential quantifier that remains first-order by quantifying over sets. Quine's symbolization of (GK) is as follows:

(2) $(\exists \alpha)((\exists x)(x \in \alpha).(x)[x \in \alpha. \supset. x \text{ is a critic }.(y)(x \text{ admires } y \supset. x \neq y.y \in \alpha)]))$
(Quine 1972, 239)

(2) is a symbolization using Quine's notation. Quine uses Greek letters as class variables and '$\in$' for the dyadic set-theoretic predicate 'is a member of'. Further, Quine uses dot notation like that of *Principia Mathematica*.[7] The following is an interpretation of (2) into a more modern system:

(3) $(\exists \alpha)((\exists x)(x \in \alpha) \& (x)(((x \in \alpha) \rightarrow Cx) \& ((y)(Axy) \rightarrow ((x \neq y) \& (y \in \alpha)))))$

In (3), 'Cx' stands for 'x is a critic' and 'Axy' is the relational predicate 'x admires y'. A reading of (3) is: There exists a set α such that, there is an x that is a member of α, and for

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[7] See (Russell 1910, 9) for a clear explanation of the usage of dot notation as delimiting punctuation.

all *x*, if *x* is a member of α then *x* is a critic and for all *y*, *x* admires *y* only if *x* is not *y* and *y* is a member of α. Notice that no second-order variable is used; (3) quantifies over an *individual* set.

Quine has taken the Geach-Kaplan sentence as requiring the introduction of sets and Quine considers a sentence like (3) to be the most precise translation. For Quine, a second-order sentence is nothing more than a first-order sentence with quantification over sets. This seemingly innocuous assertion has ontological implications. The contentious issue is that we should not symbolize a sentence in such a way that in doing so we add to our ontology. The prevailing intuition is captured by Stewart Shapiro when he offers the following interpretation of Quine's symbolization of the (GK):

> 'there is a nonempty *set* (or property) C (of critics) such that for any *x* in C and any *y*, if *x* admires *y*, then *x*≠*y* and *y* is in C.' However, this reading implies the existence of a set (or property), while the original sentence, 'Some critics admire only one another,' does not… (Shapiro 2005, 763)

It seems, as Shapiro notes, that the original sentence does not entail a set-theoretic interpretation. Although the Geach-Kaplan sentence requires an ontological commitment to critics, it does not (at least presumably) require an ontological commitment to sets of critics. This is the point of departure for Boolos and others who reject Quine's introduction of sets. The concern is that Quine's account is not ontologically innocent and the introduction of sets is a violation of intuition. Boolos proclaims, "It is haywire to think that when you have some Cheerios, you are eating a *set* – what you're doing is: eating THE CHEERIOS" (Boolos 1984, 448).

Boolos is not denying the existence of sets, but Boolos does not agree that the plural locution 'some critics' entails a commitment to a set of critics. Thus, unlike Quine who reduces second-order logic to first-order logic plus set theory, Boolos concludes that

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second-order logic can be interpreted in an ontologically innocent way with the use of plural quantification. That is, if plural quantification is ontologically innocent, then second-order sentences can be translated without being committed to the existence of anything beyond what is required in first-order logic. Boolos writes, "…neither the use of plurals nor the employment of second-order logic commits us to the existence of extra items beyond those to which we are already committed" (Boolos 1984, 449).

Using (GK) and other sentences, Boolos defended plural quantification as a way to interpret plural locutions in an ontologically innocent way.[8] Specifically, ontologically innocent plural quantification can be used to quantify over pluralities without a commitment to *collections*. Boolos writes, "Abandon, if one ever had it, the idea that use of plural forms must always be understood to commit one to the existence of sets (or 'classes,' 'collections,' or 'totalities')…" (Boolos 1984, 442).

Accordingly, Boolos interpreted the Geach-Kaplan sentence in such a way that a commitment to sets was not required. For Boolos, the locution 'some critics' is a plural locution that should be translated as quantification over a plurality. Using plural quantification, Boolos symbolized (GK) as follows:

(4) $(\exists X)[(\exists y)Xy \ \& \ (x)(y)(Xx \ \& \ Axy \ \rightarrow x \ \neq y \ \& \ Xy)]$ (Boolos 1984, 432)

The capital 'X' is the variable that Boolos uses for plural quantification. It is the variable used to indicate that the existential quantifier is quantifying over a plurality rather than an individual non-empty set. If the domain of discourse is critics then '$\exists X$' can be read as 'there are some critics'. Thus, (4) is to be read: There are *some critics* such that, there is

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[8] The two most relevant articles by Boolos are (1984) and (1985). For a single volume collection of Boolos's work in this area see (1999).

at least one *y* that is *one of them* and for all *x* and all *y*; if *x* is *one of them* and *x* admires *y*, then *x* is not *y*, and *y* is *one of them*. This reading, Boolos would claim, is identical to the natural language expression. That is, the reading of (4), like (GK), does not require set-like language. Rather, the plural locutions 'some critics' and 'one of them' are used.

However, Boolos's claim that plural locutions do not require set-like language has a number of critics. The success of Boolos's project is controversial and the subject of a significant body of literature on the matter.[9] In the next section I look specifically at a paper by Michael Resnik (1988) where he offers what I consider to be a successful refutation of Boolos's views on ontologically innocent plural quantification. Resnik argues that his intuitions lead to the opposite conclusion of Boolos, namely, that plural locutions can only be understood as having a set-theoretic structure. Thus, Resnik argues that plural quantification is not ontologically innocent. I turn now to an analysis of Resnik's criticisms of Boolos.

I.V – Against Ontologically Innocent Plural Quantification

To begin, Resnik summarizes Boolos's argument. For the first premise in Boolos's argument, Resnik offers the following:

> We need not posit classes or collections in order to render second-order sentences intelligible. We can simply translate them into ordinary language using plural quantifiers (Resnik 1988, 75).

Unlike Quine, Boolos defends an ontologically innocent conception of second-order logic using plural quantification. That is, using plural quantifiers, the Geach-Kaplan sentence

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[9] For a critical view of plural quantification see Hazen (1993); Laycock (2006); Linnebo (2003); Parsons (1990); Quine (1986); Resnik (1988); de Roulihan (2002). For a sympathetic view of plural quantification see Boolos (1984, 1985, 1999); Lewis (1991); McKay (2006); Shapiro (1991, 2005); Simons (1997).

can be accurately translated without the need for a collection of critics. Resnik continues

with Boolos's second premise:

> Using plural quantifiers does not commit one to classes or collections. Indeed, it
> does not commit one to anything that one is not already committed to by means
> of one's use of singular quantifiers (Resnik 1988, 75).

Here Resnik is reiterating Boolos's notion of ontological innocence. Ontological

innocence does not mean absence of ontological commitment. Rather, ontological

innocence means that a translation is performed with no net change in ontology. Resnik

presents Boolos's conclusion as follows:

> Thus, the use of second-order logic need not commit one to collections or sets.
> Quine is wrong: second-order logic is not class theory in disguise (Resnik 1988,
> 75).

If Boolos is right, then a sentence that is irreducibly second-order can still be interpreted

in an ontologically innocent way using plural quantification. However, if Boolos's first

premise turns out to be incorrect, then Boolos's argument does not go through. It is the

first premise that Resnik and others have a problem with.

Returning to the Geach-Kaplan sentence, Resnik argues that he is naturally

inclined to understand the sentence as saying, "There is a nonempty collection of critics

each member of which admires no one but another member" (Resnik 1988, 77). This is

an interpretation consistent with Quine's views on the matter. Resnik argues that the

sentence 'There is a nonempty collection of critics' is the correct way to interpret the

sentence 'There are some critics'. However, as I have noted, this interpretation requires a

commitment to collections which is not an ontologically innocent commitment.

Both Resnik and Boolos argue that their respective interpretations most accurately

correspond to the natural language expression. For Boolos, the symbolization should not

involve sets since the natural language sentence does not contain any set-theoretic terms.

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In contrast, Resnik argues that the sentence cannot be correctly understood without set-theoretic notions. Thus, when symbolizing 'Some critics', Boolos uses '∃X' for 'there are some x's', and Resnik (the traditional view) uses '∃α' for 'there is a set α'.

Resnik's criticism focuses on the English translation of Boolos's symbolization (4). Resnik interprets (4) as follows:

> There are some critics such that any *one of them* admires another critic only if the latter is *one of them* distinct from the former (Resnik 1988, 77; Resnik's italics).

This is not uncharitable to Boolos, who offers the following interpretation of his symbolization:

> …there are some critics each of whom admires a person only if that person is one of them and none of whom admires himself (Boolos 1985, 328).

Regarding both interpretations, Resnik has the following intuition:

> But this sentence seems to me to refer to collection quite explicitly. How else are we to understand the phrase 'one of them' other than as referring to some collection and as saying that the referent of 'one' belongs to it? (Resnik 1988, 77).

Notice that Boolos uses precisely the same locutions that Resnik finds so problematic; namely, 'one of them'.

The intuition that the locution 'one of them' refers to a collection may be due in part to the typical grammatical usage of 'them'. 'Them' is commonly used as an object pronoun in which some antecedent is known from context. However, 'them' is unique in that it is a *plural* form of an object pronoun. Thus, for proper pronoun-antecedent agreement, the reader would expect the antecedent to be a plurality. In the case of the Geach-Kaplan sentence, the antecedent of the plural object pronoun 'them' is some critics. This is what Boolos has in mind when he writes, "What I ought to be committed to is *some critics*, but not to a class of critics" (Boolos 1985, 331).

However, the context in which 'them' occurs has 'them' following 'one of'. Here 'one' is indicating that there is numerically one critic being referred to and 'of' serves the function of indicating that the one is to be found in the referent of 'them'. That is, 'them' is an anaphor, the cross-reference of which is some collection in which the one is to be found. In (GK), if the domain of discourse is all critics, then the anaphor 'them' is picking out a collection of critics in which the predicate applies to any one of them. The locution 'some critics' is picking out the collection of critics, out of all critics, in which the referent of 'them' is to be found. The problem with Boolos's view is that he has not gone far enough in his regimentation of 'one of them'. If Boolos were to continue explicating 'one of them', then the next step would be to posit a collection.

There are many challenges to an ontologically innocent view of plural quantification. The challenge I have addressed is that Boolos's intuitions are incorrect and that upon analysis, second-order sentences require quantification over collections.[10] Thus, plural quantification does not afford the ontological innocence that Boolos claims.

I.VI – Deflationist on Predicate Equivocation

I can now return to Sider's argument and express my concerns more clearly. The central claim in Sider's response to the deflationist argument from equivocation is as follows:

> To be sure, he [nihilist] admits simples arranged tablewise (here I quantify plurally), but he rejects the existence of (mereological) *collections* of them (Sider 2009, 388: brackets mine).

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[10] In addition to Resnik, Linnebo (2003), Parsons (1990), and Rouilhan (2002) share the intuition that, to be properly understood, 'them' as a plural cross-reference requires some notion like a collection.

Sider is claiming that the nihilist can, using ontologically innocent plural quantification, grant the proposition 'There exist simples arranged tablewise' while denying 'There exists a collection of simples arranged tablewise'. However, I have shown that plural quantification is not ontologically innocent. I now consider the implications of such a claim.

Considering the following two propositions that Sider's nihilist is making claims about. The nihilist claims that the following is the case:

(5)   Some simples are arranged tablewise.

Additionally, the nihilist claims that the following is *not* the case:

(6)   Some collection of simples is arranged tablewise.

These are analogous to P1 and P3, but slight changes have been made to demonstrate the parallel analysis with the Geach-Kaplan discussion. The locution 'there exists' has been interpreted as existential quantification. Hence, the use of the particular quantifier 'some'. Moreover, the copula has been made explicit to facilitate discussion of the logical structure. The significance of using a plural copula in (5) and a singular copula in (6) will be addressed in section VIII.

Given the discussion in sections V and VI, (5) would be analogous to the plural quantification interpretation of Boolos, and (6) would be analogous to the traditional interpretation of Quine and others. Sider's argument turns on the nihilist granting the proposition 'Some simples are arranged tablewise' while denying the proposition 'Some collection of simples is arranged tablewise'. This is the case only if plural quantification

is ontologically innocent. What remains is to show that the quantification in (5) cannot be done in an ontologically innocent way. That is, to show that (5) and (6) are synonymous.

As was the case for the Geach-Kaplan sentence, it will be helpful to symbolize (5). Using 'T' for the monadic predicate 'arranged tablewise', (5) can be symbolized using plural quantification as follows:

(5′) $\exists X(y(Xy \rightarrow Ty))$

With the domain of discourse being all simples, (5′) can be read as: There are some simples such that, for any simple that is one of them, that simple is arranged tablewise. The locution 'some simples' expresses the plural quantification. Consistent with a plural quantification interpretation, the locution 'one of them' is used.

The introduction of 'one of them' is required for a correct translation of (5). The same intuition that applied to Boolos's interpretation of the Geach-Kaplan sentence applies here. The proper understanding of 'them' in 'one of them' is to view the referent as being a collection. The proposition 'Some simples are arranged tablewise' is claiming that some group of simples is arranged tablewise. The proposition is predicating 'arranged tablewise' onto some simples rather than all simples. The nihilist is surely not committed to the claim that all simples are arranged tablewise. That would make for a very peculiar reality for the nihilist. What the nihilist has in mind is that, of all the simples in reality, there are some that form a tablewise arrangement. That is, the nihilist is trying to pick out some collection of simples. Thus, the proposition 'Some simples are arranged tablewise' can be seen as a paraphrase of the proposition 'Some collection of simples is arranged tablewise'.

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Thus, analogous to the conclusion about (GK), (5) requires a commitment to collections despite the absence of the term 'collection'. The proposition 'Some simples are arranged tablewise' cannot be explicated without relying on set-like language. The plural pronouns are the natural language devices used to colloquially express what the logic makes explicit. While (5) and (6) are different sentences, they express the same proposition.

Sider's response to the deflationist rests on ontologically innocent plural quantification. Since plural quantification is not ontologically innocent, (5) and (6) are synonymous. Thus, by granting the proposition 'There exist simples arranged tablewise' the nihilist is also committed to the proposition 'There exist collections of simples arranged tablewise'. Therefore, the deflationist is correct to claim that the nihilist and universalist must be disagreeing because of an equivocation on the meaning of 'table'.

I.VII – Collective Predication

There is an additional concern that Sider must address to be successful in refuting the deflationist argument. The discussion in section VI focused on the parallel between (GK) and the proposition 'Some simples are arranged tablewise'. I concluded that since plural quantification is not ontologically innocent, the proposition 'There exist simples arranged tablewise' is synonymous with the proposition 'There exist a collection of simples arranged tablewise'. However, there is a problem with Sider's sentences that is not a problem for the Geach-Kaplan sentence, namely, the nature of the predication in Sider's sentences.

The proposition 'Some simples are arranged tablewise' (5) is symbolized by (5′). Recall that, if the domain of discourse is all simples, (5′) may be read as follows: There are some simples such that, for any simple; if the simple is one of them, then the simple is arranged tablewise. Thus, the proposition 'Some simples are arranged tablewise' has the same meaning as the proposition 'There are some simples such that, for any simple; if the simple is *one of them*, then *the simple is arranged tablewise*'.

I have highlighted the two concerns I have with the proposition 'Some simples are arranged tablewise'. The first is that the problematic plural locution 'one of them' is involved. Second, and the focus of this section, is that a plural quantification reading of the proposition 'Some simples are arranged tablewise' entails a commitment to the proposition 'The simple is arranged tablewise'. The proposition 'The simple is arranged tablewise' is problematic. Even if plural quantification was ontologically innocent, the nihilist is committed to predicating 'arranged tablewise' onto individual simples. I am going to argue that an individual simple cannot have 'arranged tablewise' as a predicate, but first I need to address the type of predication involved. The two types I will discuss are distributive and collective predication.

In explicating collective and distributive predication, I will consider a paradigmatic case of each type. This will make the distinction perspicuous enough for my purposes.[11] The sentence 'Some students are philosophers' is an example of distributive predication. The predicate can be applied iteratively. The sentence is an ellipsis of "student$_1$ is a philosopher, student$_2$ is a philosopher, … student$_n$ is a philosopher." The attribute 'philosopher' applies to students individually.

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[11] For a fuller discussion of plural predication see McKay (2006); Yi (2005, 2006); Massey (1976); Nicolas (2008); Simons (1997); de Rouilhan (2002).

The predicate 'is a philosopher' is a first-order monadic predicate. It is an attribute that applies to individual things one by one. While a first-order monadic predicate may be true of many things, it is true of them individually. Thus, although the sentence is picking out some particular set of students, it is predicating of those students an attribute that each one of them has. A plural quantification (innocent or otherwise) interpretation of this sentence would be successful. So plural quantification can be considered when a predicate is distributive. That is, the proposition 'Some students are philosophers' can be read as: Some students are such that each one of them is a philosopher.

The sentence 'Some students are surrounding Eddy Hall' is an example of non-distributive or collective predication. The predicate must be applied collectively rather than iteratively. The sentence must mean that the students are collectively surrounding Eddy Hall since the sentence cannot be interpreted as: There is a group of students and each one of them is surrounding Eddy Hall. Moreover, the sentence is grammatical even though the predicate does not distribute. When a sentence has a collective predicate, the sentence cannot be symbolized using plural quantification. Plural quantification entails the locution 'one of them' and a collective predicate cannot apply to an individual.

Even if Sider tried to reword the sentence, the problematic locution 'one of them' would remain. For example, Sider could argue that the proposition 'Some simples are arranged tablewise' is a paraphrase for 'Some simples are in a tablewise arrangement with one another'. This may appear to generate a distributive predicate, but like (GK), this sentence entails the problematic locution 'one of them'. The sentence should be read as: There are some simples such that, for all x and all y, if x is one of them and y is one of

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them then x is in a tablewise arrangement with y. Adding a relational predicate will do no work for Sider. Just like the Geach-Kaplan sentence, 'one of them' must be understood as explicitly referring to a collection.

Rewording will not change the type of predication. I consider the proposition 'Some simples are arranged tablewise' to be a proposition that involves collective predication. That is, I consider 'arranged tablewise' to be a collective predicate in the same way 'surrounding Eddy Hall' is a collective predicate. The predicate cannot apply to individuals, but rather must apply to a collection as a whole. This is why using plural quantification to symbolize the sentence 'Some simples are arranged tablewise' was unsuccessful. The 'arranged tablewise' predicate cannot be iteratively applied to students. The sentence 'Some simples are arranged tablewise' is *not* an ellipsis for "Simple$_1$ is arranged tablewise, Simple$_2$ is arranged tablewise, … Simple$_n$ is arranged tablewise". Thus, the predicate must be collective. Since plural quantification requires a distributive predicate, trying to symbolize the sentence 'Some simples are arranged tablewise' with plural quantification (innocent or otherwise) simply will not work.

I.VIII – Predicate Equivocation Maintained

The deflationist that Sider is addressing is concerned about ontological debates being merely verbal. Certain ontological debates, the deflationist argues, are simply a matter of the ontologists talking past one another. In this paper, I have discussed Sider's defense of the ontological debate about composite material objects. As an ontological realist, Sider argues that the debate about the ontological status of tables is substantive.

That is, the debate about the ontological status of a table is meaningful and the universalist and nihilist have genuinely opposing positions.

The nihilist and universalist disagree on whether or not a table exists. The deflationist argument from equivocation states that the debate is only apparent because the ontologists are equivocating on the meaning of 'collection' in the definition of 'table'. Sider disagrees with the deflationist and argues that the ontologists agree on 'table' defined as a collection of simples arranged tablewise, but do not agree on whether something counts as a table. The deflationist does not think the nihilist can deny the existence of tables if they are defined as collections of simples arranged tablewise. Sider's response to the deflationist is that, using plural quantification, the nihilist can grant the proposition 'There exist simples arranged tablewise' and deny the proposition 'There exists a collection of simples arranged tablewise'.

It turns out that there are a couple of related problems for Sider's nihilist: the ontological innocence of plural quantification and the nature of the predication in the proposition 'There exist simples arranged tablewise'. I argued in section III that Sider's nihilist requires plural quantification to be ontologically innocent, since if plural quantification is not ontologically innocent, then the nihilist will be committed to a collection when asserting the proposition 'There exist simples arranged tablewise'.

In section IV, I evaluated the plural quantification and its ontological innocence. I briefly discussed the two major traditions associated with plural quantification. Quine's view represented the position of second-order logic being reduced to first-order logic with the addition of set theory. However, Boolos and others have argued that ontologically innocent plural quantification is the correct method of interpreting

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irreducibly second-order sentences. Boolos used the Geach-Kaplan sentence in his proof of the ontological innocence of plural quantification, yet in section V, I looked at criticisms by Resnik where Resnik argues that Boolos's understanding of the Geach-Kaplan sentence is incorrect. The conclusion I reached was that plural quantification is not ontologically innocent.

Thus, as I show in section VI, Sider's response to the deflationist is untenable. Since plural quantification is not ontologically innocent, the proposition 'There exist simples arranged tablewise' is synonymous with 'There exist collections of simples arranged tablewise'. The nihilist cannot grant the existence of simples arranged tablewise and deny the existence of a collection. Therefore, if the nihilist accepts the definition of 'table', as Sider claims, then the nihilist would be committed to the existence of tables. Hence, the deflationist argument from equivocation still holds. The ontologists must disagree on the meaning of 'table'.

The second concern I addressed regarding Sider's argument was the nature of predication in the sentences he chose. Sider's nihilist uses plural quantification to interpret a sentence in which the predicate does not distribute. In section VII, I show that a distributive predicate is needed for plural quantification and that the nihilist's sentence contains a collective predicate. The goal of plural quantification is to avoid a commitment to collections, yet a collection is required with a collective predicate. A collective predicate is by definition a predicate that applies to a collection. Thus, Sider's nihilist cannot use plural quantification to interpret the proposition 'There exist simples arranged tablewise'.

Plural quantification is not ontologically innocent; thus, using plural quantification will commit the nihilist to a collection. The nihilist's sentence 'Some simples are arranged tablewise' has a collective predicate; thus, a commitment to simples arranged tablewise entails a commitment to a collection. If the nihilist is committed to a collection then the deflationist is right to argue that the proposition 'There exist simples arranged tablewise' is synonymous with the proposition 'There exists a collection of simples arranged tablewise'. Thus, Sider's response to the deflationist argument from equivocation is unsuccessful.

CHAPTER TWO: MEREOLOGICAL COLLECTIONS AND VAGUENESS

II.I– Mereological Collection

In the first chapter, I argued that plural quantification is not ontologically innocent; thus, Sider (2009) was not successful in blocking the deflationist argument from equivocation. In this chapter I want to show that Sider's response to the deflationist is not successful for a different reason, namely, because the substantive ontological debate he tries to defend rests on an equivocation.

Sider responds to the ontological deflationist by defending the substantive nature of a paradigmatic ontological argument about composite material objects. The debate that Sider presents is about the ontological status of composite material objects, specifically, the ontological status of a table. Sider's strategy is to choose an actual debate between two ontologists and then show that the debate is substantive. In the first chapter, I argued against Sider's claim that the ontologists could employ plural quantification to avoid the criticism that they are equivocating over the predicate 'is a table'.

Sider argues that it is a fact of the matter that David Lewis and van Inwagen disagree on the ontological status of tables, and they do so for a reason other than equivocation on the word 'table'. In this chapter, I will investigate Sider's claim that the ontologists agree on the meaning of the word 'table', but disagree over whether or not the word denotes anything. Moreover, I will look at what the ontologists would mean by

'table' if the word does in fact denote something. As a pre-theoretic formulation of the ontological argument, take David Lewis (Sider's DKL) to be arguing for the existence of tables, and Peter van Inwagen (Sider's PVI) to be arguing against the existence of tables.

The deflationist claims that the debate is merely verbal and that the ontologists are equivocating on one or more of the essential terms in the argument. Specifically, the deflationist attempts to show that the disagreement between the ontologists is due to the ontologists using different definitions of 'table'. Since this is an ontological debate about composite material objects, 'table' is defined in terms of a collection as follows:

x is a table $=_{df}$ x is a collection of simples arranged tablewise (Sider 2009, 388)

So the debate is over whether or not something counts as a collection of simples arranged tablewise. The debate, then, can be restated as follows: Lewis admits the existence of tables since he admits the existence of a *collection* of simples arranged tablewise, but van Inwagen denies the existence of tables because van Inwagen does not admit the existence of a *collection* of simples arranged tablewise.

The deflationist claims that they each mean something different by 'collection'. The deflationist, according to Sider, is "trying to show that the appearance of ontological disagreement arises from PVI's idiosyncratic use of 'table'" (Sider 2009, 390). Sider argues that the ontologists agree on the meaning of the word 'table', but I will argue that David Lewis and van Inwagen would not agree. Thus, I argue that the deflationist argument from predicate equivocation goes through because the two ontologists do in fact disagree on the meaning of 'table'. Sider tries to forestall such an objection by discussing three candidate meanings of the word 'collection', and showing that in each case, the deflationist is not successful in proving that the ontologists are equivocating. I

turn now to an account of the three candidate meanings and how they fit in the context of the debate.

II.II – Candidate Meanings for 'Collection'

The three candidate meanings are succinctly presented by Sider in the following::

> [3] interpreting 'table' as 'thing whose parts are simples arranged tablewise' does not secure the synonymy between these sentences; [2] interpreting 'table' as 'set whose members are simples arranged tablewise' is clearly not what DKL (or PVI) means by 'table'; [1] interpreting 'table' as 'simples arranged tablewise' violates grammar. (Sider 2009, 390; my numbering)

The numbers correspond to my definitions below. These three candidate interpretations will serve as the focus of this chapter. My aim is to investigate the three definitions of 'table' and express my concerns with the unique notion of 'collection' involved in each. These concerns will be directed at Sider's response to the deflationist for each definition of 'table'.

Each definition will involve a notion of 'collection' that is consistent with David Lewis's views on the matter. Sider is clear that Lewis's meaning of 'collection' in the definition of 'table' is what is under consideration. That is, Sider is basing the disagreement between the ontologists on an "interpretation of 'collection' under which DKL's 'table' is plausibly taken as meaning 'collection of simples arranged tablewise'" (Sider 2009, 388). Accordingly, Sider uses Lewis's views as the central point of consideration for each definition of 'table', and I will do the same in this chapter.

Based on the three options given above, and using Lewis's terminology, the following are the labels for each candidate definition:

(1) Composition as Identity: x is a table $=_{df}$ x is simples arranged tablewise

(2) Set-Theoretic: x is a table $=_{df}$ x is a set-theoretic collection of simples arranged tablewise

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(3) Mereological: x is a table $=_{df}$ x is a mereological collection of simples arranged tablewise

It will be helpful to briefly explicate what the deflationist has in mind with each of the three definitions before looking at Sider's response.

The Composition as Identity (1) definition is simply stating that the word 'collection' should be removed from the definition. Here the deflationist would argue that PVI's rejection of collections is not sufficient to avoid a commitment to tables. Thus, the argument is merely verbal because given this definition of table, both ontologists are committed to their existence.

The set-theoretic (2) definition of table is stating that 'collection' should be understood as a set whose members are simples arranged tablewise. The deflationist would argue that if DKL has a set-theoretic definition in mind, and PVI is committed to a set of simples arranged tablewise, then PVI cannot avoid a commitment to tables. Once again, the deflationist would argue that both ontologists would be committed to tables if they were both committed to sets of simples arranged tablewise.

Finally, the mereological (3) definition is one in which 'collection' is to be understood as a fusion or whole whose parts are simples arranged tablewise. The deflationist (according to Sider) would argue that if DKL has a mereological notion of 'collection' in mind, then PVI would be committed to the existence of tables. This commitment follows from PVI admitting the existence of a mereological fusion of simples arranged tablewise.

In all three cases, the goal of the deflationist is to show that the debate is merely verbal. That is, the deflationist will argue that in each case, if the definition of 'table' is agreed upon by the ontologists, then the ontologists must also agree on the ontological

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status of tables. Sider argues against each position in turn. Sider's strategy is to highlight a misunderstanding by the deflationist in each case. In what follows, I will evaluate Sider's response to the deflationist's three candidates for the definition of 'table'.

In each case, I will express my concerns for Sider's response and investigate the issues more deeply to offer either support or criticism of Sider's understanding of the deflationist position. In what follows, I investigate the three interpretations in numerical order as presented above. I will place special emphasis on the mereological interpretation since I aim to show that the mereological interpretation is the one on which the ontologists cannot agree.

II.III – Collection: Candidate Meaning One

For the Composition as Identity (1) candidate meaning, Sider writes the following:

> By 'collection of simples arranged tablewise', could the author of the paragraph mean simply: 'simples arranged tablewise'? In that case the definition is ungrammatical: '*x* is a table iff *x* is simples arranged tablewise'. (Sider 2009, 389)

Here Sider's main concern is that the result of removing 'collection' will be that the singular verb 'is' will be followed by 'simples arranged tablewise' which is a plural noun phrase. Thus, Sider is claiming that the word 'collection' is necessary for the definition to be grammatical. Sider's claim is that using the singular noun 'collection' is required to grammatically and correctly refer to the plurality of simples arranged tablewise. The issue that the grammar brings to the surface is the problem of referring to a plurality.

The strategy for the deflationist is to appeal to Composition as Identity which will allow an interpretation of the 'is' not as predication, but as the 'is' of identity. That is, Composition as Identity allows for a table to be identical to that which it is composed of. Thus, allowing 'collection' to be dropped since its inclusion would be redundant. This

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singular and plural language is not problematic if the principle of Composition as Identity

is introduced. Sider captures why that is the case and offers a response in the following:

> Believers in "composition as identity" obliterate the metaphysical distinction
> between one and many, and so may wish to introduce a language that makes no
> grammatical distinction between singular and plural… But I doubt that our neo-
> Carnapian deflationist plans to convince us that the dispute between the
> metaphysicians PVI and DKL is merely verbal by first convincing us of the *truth*
> of composition as identity. (Sider 2009, 389 fn. 19)

From this, I gather that Sider's response to the removal of the word 'collection' is in two

parts. First, without 'collection' the definition is ungrammatical and second, Composition

as Identity is likely not what the deflationist has in mind. The former warrants

investigation, but not before the latter is addressed.

The reason I disagree that the deflationist would not appeal to Composition as

Identity has to do with the philosophical views of the ontologists that Sider chooses.

Sider is correct to choose David Lewis (DKL) and Peter van Inwagen (PVI) as

representing (at least regarding composite material objects) opposing philosophical

viewpoints. However, in choosing to use philosophers and their viewpoints for his

debate, Sider invites the deflationist to consider their views as well.

I find it reasonable then to consider the ontologist's (especially David Lewis's)

philosophical views when investigating Sider's argument. I take the following quotes to

show that Sider supports this approach and relies on the philosophical views of David

Lewis:

> ...at least, not given the interpretation of 'collection' under which DKL's 'table' is
> plausibly taken as meaning...

> ...it's clear that DKL does not mean by 'table': set-theoretic collection... (Sider
> 2009, 388–389)

Accordingly, the actual views of David Lewis are central to Sider's discussion as well as

my own. Given Lewis's views on the matter, the deflationist is justified in appealing

appeal to the principle of Composition as Identity, since that principle is central to Lewis's views on composition.

It is the case that the Composition as Identity thesis is central to Lewis's mereology. Thus, if Lewis's definition of 'table' is the definition to be agreed on by the ontologists, then the deflationist is correct to claim that 'collection' should be understood in light of the Composition as Identity principle. In appealing to this principle the deflationist would argue that there is no grammatical concern since Composition as Identity allows a table to be identified with that which composes it. By identifying 'table' with 'simples arranged tablewise', the word 'collection' is no longer needed. This is at least the strategy the deflationist would have in mind by appealing to Composition as Identity.

However, this is not to say that Composition as Identity is necessary for the deflationist conclusion. Rather, it is sufficient. If 'table' is defined as simples arranged tablewise, then Sider writes, "PVI cannot coherently deny 'There exist tables' while accepting that some particles are arranged tablewise" (Sider 2009, 389). With the principle of Composition as Identity, that is how 'table' would be defined. Thus, if the ontologists agreed on Lewis's definition of 'table' there would not be a substantive debate. That is, candidate definition (1) is a possible meaning under which the deflationist argument would go through.

Appealing to the principle of Composition as Identity—candidate definition (1)—is sufficient, but not necessary, for the deflationist argument to go through. The point I am making here is that Sider should not simply dismiss the deflationist's appeal to Composition as Identity, since such an appeal could be a successful strategy. However, more can be said on Sider's behalf, and rather than grant the deflationist argument so

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easily, I want to show an alternative reason why candidate definition (1) is not a live option. I will not reject the deflationist's appeal to the principle, rather I will show that appealing to Composition as Identity will in fact not achieve the deflationist goal.

My aim is to show that even if the deflationist appeals to Composition as Identity, the deflationist will still fail in proving the debate is verbal. Again, this will only show that (1) is not a candidate meaning that the deflationist can appeal to in support of their argument. In later sections I will look at whether or not (2) and (3) are live options for the deflationist.

If I am successful in showing that an appeal to Composition as Identity will not support the deflationist goal, then I will have shown that Sider is right (although for reasons different than what he offers) to deny the deflationist the first candidate definition: Composition as Identity (1). To begin, I will explicate and provide a critical analysis of the Composition as Identity thesis.

II.IV – Composition as Identity

David Lewis describes Composition as Identity as follows:

> I say that composition – the relation of a part to whole, or, better, the many-one relation of many parts to their fusion - is like identity... Call this the Thesis of *Composition as Identity*. It is in virtue of this thesis that mereology is ontologically innocent: it commits us only to things that are identical, so to speak, to what we were committed to before. (Lewis 1991, 82).

For Lewis, the Composition as Identity thesis states that a mereological fusion is nothing over and above its proper parts. For example, given a commitment to the existence of my keyboard and pencil, it is no further ontological commitment to accept a fusion of my keyboard and pencil. I am ontologically committed to the keyboard-pencil fusion as soon as I commit to the ontology of the keyboard and the pencil.

As Lewis remarks, it would be "double counting" to add the keyboard-pencil fusion to my ontology. One might consider the keyboard-pencil as a way of referring to a plurality using a singular notion. Even stronger, the Composition as Identity thesis claims that the keyboard-pencil is, in some way, identical to the keyboard and pencil. Lewis characterizes this identity as follows:

> ...given a prior commitment to cats, say, a commitment to cat-fusions is not a *further* commitment. The fusion is nothing over and above the cats that compose it. It just *is* them. They just *are* it. (Lewis 1991, 81)

I take Lewis to be identifying a fusion with its members in a very strong way. The 'is' in the quote is the 'is' of identity. The 'are' is supposed to be like the 'are' of identity. If a fusion is identical to its members, then there would be no need to use 'collection' to refer to the members since the collection and the members are in some sense identical.[12]

Regarding Sider's ontological debate, Lewis would argue that, granting the composition as identity thesis, it would be double counting to count the simples-arranged-tablewise fusion in addition to the simples arranged tablewise. The simples-arranged-tablewise fusion just *is* the simples arranged tablewise. For Lewis, if one is already committed to simples arranged tablewise, then it is no further commitment to accept the existence of mereological collections of simples arranged tablewise. Thus, the word 'collection' would be redundant in Lewis's definition of 'table'.

For Lewis, mereology is ontologically innocent because of the principle of Composition as Identity. Roughly, according to Lewis's mereology, a *fusion* is posited when things compose something. According to the principle of Composition as Identity, a commitment to the fusion is an ontologically innocent because it just *is* (in some sense) identical to those things which compose it.

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[12] Lewis is not alone in his view. Similar composition as identity claims are made in Armstrong (1978), Baxter (1988a) and (1988b)

This would be an easy (too easy I think) response by the deflationist to Sider. The deflationist could argue that, since mereology is ontologically innocent for Lewis, there is no reason to debate the existence of a mereological fusion because it is nothing over and above its parts. This would result in a debate that is merely verbal, but success for the deflationist depends on an acceptable defense of Lewis's Composition as Identity thesis. If the Composition as Identity thesis is denied, then mereology is not ontologically innocent for Lewis. In the next section, I will follow Byeong-Uk Yi (1999) and argue that Lewis's argument for Composition as Identity is problematic.

II.V – Against Ontological Innocence of the Composition Relation

Byeong-Uk Yi (1999) calls Lewis's view the "Innocence Conception of Mereology" according to which, "one who accepts mereology makes no ontological commitment beyond the one that he has made independently of doing so." In contrast, Yi argues that a mereological commitment *is* a further ontological commitment. That is, mereology is not ontologically innocent. A mereological fusion on this account would be something over and above its proper parts.

However, for Lewis, composition is the relation that allows a composite to be nothing more than the sum of its parts. The following quote captures what Lewis has in mind:

> The 'are' of composition is, so to speak, the plural form of the 'is' of identity.
> (Lewis 1991, 82)

The Composition as Identity thesis can be thought of as the 'are' of identity. The question is whether the 'are' of identity is ontologically innocent in the same way as the 'is' of

identity. I agree with Yi that Composition as Identity is not ontologically innocent and that Lewis's argument for its innocence is problematic.[13]

To begin, Yi separates the composition thesis into a strong and weak version. The strong version is such that a mereological fusion is strictly and literally identical to its constituent parts. Lewis defines strict identity as "ordinary identity, the one-one relation that each thing bears to itself and to nothing else" (Lewis 1991, 84). I mention this strong sense only for completeness and to provide context for what Lewis has in mind in the weak sense of identity. Lewis thought that the strong version was too contentious and opted to construct his Composition as Identity thesis using a less restrictive notion of identity.

This less restrictive notion of identity is what Lewis calls "identity in the broadened sense" (Lewis 1991, 85). This broadened sense of identity is the basis of the weaker form of the composition as identity thesis. In the weaker version, the identity of composition is *analogous* to the strict and literal identity of logic. In discussing this form of the identity thesis, Lewis writes the following:

> ...the mereological relations (however restated) are something special... they are strikingly analogous to ordinary identity... So striking is this analogy that it is appropriate to mark it by speaking of mereological relations – the many-one relation of composition, the one-one relations of part to whole and of overlap – as kinds of identity. (Lewis 1991, 84)

I am highlighting Lewis's use of analogy because this is where the criticisms will focus. Yi accurately captures Lewis's use of this analogy and provides a list of propositions to explicate the flaw in Lewis's reasoning.

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[13] For additional discussion critical of Composition as Identity see Koslicki (2008), Oliver (1994), Sider (2007*b*), van Inwagen (1994). For additional discussion in support of Composition as Identity see Armstrong (1978), Baxter (1988a, b), Sider (2001).

The following propositions are adopted from Yi (1999, 152):

(i)   There is a cat.

(ii)   There is a mouse.

(iii)   There is something that the cat and the mouse *are*.

(iv)   There is something that the cat *is*.

The 'are' in (iii) is the composition relation. That is, (iii) may be read as: There is something that the cat and the mouse compose. Lewis argues that by asserting (i), asserting (iv) becomes redundant. To say, 'There is a cat' is equivalent to saying 'Something is a cat'. Accordingly, Lewis would argue that (iv) is redundant given (i) because they express the same proposition. In granting (i), there is no additional ontological commitment in granting (iv).

Lewis's argument continues by claiming that the same reasoning applies to the composition relation, the 'are' of composition. For Lewis, the composition relation, as in (iii) is analogous enough to ordinary identity to be treated as a kind of identity. The analogy is so strong between the two that they perform the same function in the type of reasoning above.

Lewis argues that because 'are' in (iii) is "so strikingly" analogous to 'is' in (iv), that (iii) is an ontologically innocent assertion in the same way (iv) is. For Lewis, asserting that there is a cat and mouse is ontologically equivalent to asserting that there is something that the cat and the mouse compose, *because* asserting that there is a cat is ontologically equivalent to asserting that something is a cat.

Lewis's argument turns on the analogy between the composition predicate in (iii) 'something that the cat and mouse are' and the identity predicate in (iv) 'something that the cat is'. Lewis argues that the analogy between composition and identity is strong

enough to allow composition to be ontologically innocent like identity. Thus, Lewis argues that the analogy is strong enough to support the aptly named Composition as Identity thesis.

To try and reinforce this claim, Lewis offers a number of respects in which the composition relation is analogous to the identity relation (1991, 85ff.). The first is *Unrestricted Composition*, which states anytime there is a cat, there is something identical to the cat. Analogously, anytime there is a cat and a mouse, there is something that is identical to the fusion of the cat and mouse.

Second, *Uniqueness of Composition*, states that two different things cannot be identical to a particular cat in the same way that two different things cannot be identical to the particular fusion of a cat and mouse. The last two are, *Ease of Describing Fusions* and *Coincidence of Location*. These state that a full description of a particular cat, including its location, fully describes that which is identical to the cat. Analogously, a fully described fusion is identical to the full description of the parts.

Whether or not these analogies hold is not currently under investigation. Lewis's argument is that if these analogies hold, then composition and identity are analogous in another respect, namely, ontological innocence. The problem here is that an argument from analogy, where the four respects characterize the analogy, is not sufficient to claim that composition is ontologically innocent. This argument simply does not work. None of the respects in which composition is analogous to identity logically *entails* ontological innocence for composition. Yi concludes that the argument from analogy is a "non-sequitur" and involves a "flagrant fallacy" (Yi 1999, 153).

So either Lewis's argument begs the question or it rests on faulty reasoning. Either way, Lewis's argument for the ontological innocence of composition is not

successful. The Composition as Identity thesis does not obtain; thus, a commitment to a fusion is not an ontologically innocent commitment. The word 'collection' is not redundant and cannot be removed from the definition of 'table'. Thus, candidate definition (1) does not support the deflationist conclusion. Thus, the first of the three candidate definitions for the deflationist has been shown to not achieve the deflationists goal. However, any of the three would be sufficient for the deflationist. I turn now to the second candidate definition: set-theoretic.

II.VI – Collection: Candidate Meaning Two

Regarding the set-theoretic definition of 'table', what the deflationist has in mind is that the debate will be verbal if Lewis's definition of 'table' is set-theoretic and van Inwagen is committed to set. When considering whether or not Lewis's definition of 'table' is set-theoretic, Sider writes, "it's clear that DKL does not mean by 'table': set-theoretic collection of simples arranged tablewise" (Sider 2009, 389). Sider goes on to say that DKL and PVI are "perfectly clear on the distinction between parthood and set-membership (Sider 2009, 389).

This captures most of the discussion Sider provides regarding the set-theoretic interpretation. My presentation will be similarly brief, since here I agree with Sider that the deflationist would be mistaken to think that the definition of 'table' that the ontologists have in mind is set-theoretic. To be sure, Lewis would not have a set-theoretic definition in mind. However, the deflationist could argue that, even though Lewis does not have a set-theoretic definition in mind, Lewis's 'part' is synonymous with van Inwagen's 'member'. Then the deflationist would claim that the debate is merely verbal because the ontologists are conflating 'part' and 'member'. Sider writes the following:

> The author [deflationist] might reply that DKL means by 'part' what PVI means by 'member'. But this would be a mistake, since transitivity is presumably a sort of meaning-postulate on DKL's 'part' but not on PVI's 'member'. (Sider 2009, 389 fn. 18)

To see what work this is doing for the deflationist, consider once again the definition:

x is a table $=_{df}$ x is a set-theoretic collection of simples arranged tablewise

Here it may be helpful to restate the definiens as: x is a set whose members (the simples) are arranged tablewise. The deflationist then claims that, if van Inwagen is committed to a set whose members are arranged tablewise, and if Lewis's 'part' is synonymous with 'member', then they both agree on the definition and both are committed to tables. Thus, the debate would be verbal because the ontologists are conflating 'part' and 'member'.

Sider's response, seen in the quote above, is that transitivity is a property of Lewis's parthood and because of that, Lewis's 'part' and van Inwagen's 'member' cannot be synonymous. Here I agree with Sider that the ontologists are not conflating 'part' and 'member', but it is worth mentioning that the deflationist may have in mind Lewis's, especially his *Parts of Classes* (1991), project of reinterpreting set-theoretic axioms using his formulation of mereology.[14]

Although this does bring together 'part' and 'member', it does not follow that Lewis is conflating the two notions. Rather, he does an excellent job of comparing the two notions. Similarly, van Inwagen (2006) provides a clear and helpful discussion on the distinction between sets and fusions. Thus, when evaluating these ontologists, Sider is correct to claim that "DKL (like PVI) is perfectly clear on the distinction between parthood and set-membership" (Sider 2009, 389). For these reasons, I think the

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[14] See *§4.4 Set Theory Regained* (Lewis 1991, 100–107)

deflationist would be wrong to argue that the ontologists are conflating 'part' and 'member'.

As a final remark before leaving this candidate definition, Sider leaves it an open question whether or not van Inwagen believes or is committed to sets and on this point I disagree with Sider. I think the deflationist is correct to claim that van Inwagen is committed to sets, because van Inwagen is committed to non-ontologically innocent plural quantification. Yet, although this is a conclusion favorable to the deflationist position, it does not help the deflationist regarding this second candidate definition of 'table'.

I have argued that, even if the deflationist is correct to claim that van Inwagen is committed to sets, the conclusion that the debate between the ontoligists is verbal does not follow. Sider is correct to claim that Lewis does not have in mind a set-theoretic definition of 'table', rather Lewis has a mereological definition in mind. Thus, even if van Inwagen is committed to sets, this does not commit him to the existence of tables defined mereologically. Thus, there would be genuine disagreement between the ontologists.

In response, the deflationist might argue that, given Lewis's definition of a mereological collection, van Inwagen would be forced to admit the existence of tables defined mereologically. This remains to be seen, and will be the subject of investigation for the third candidate definition: mereological.

II.VII – Collection:Candidate Meaning Three

Sider argues that "the interpretation of 'collection' under which DKL's 'table' is plausibly taken as meaning 'collection of simples arranged tablewise'... is mereological: a 'collection' of things that ϕ is a thing whose *parts* ϕ" (Sider 2009, 388). I take Sider to

be claiming that it is Lewis's notion of a mereological 'collection' on which the debate between the ontologists is about. Moreover, Sider appears to characterize this mereological collection as one in which the predicate of the whole (collection of things that ф) is distributed onto the parts (thing whose parts ф). Later Sider writes, "When DKL says that there are tables, he is clear that he means: there are things whose *parts* are simples arranged tablewise" (Sider 2009, 389)

So Sider has a specific understanding of a mereological collection where the property of the collection is also a property of the individual parts. That is, Sider has distributive predication in mind, but this is problematic when a collective property such as "arranged tablewise" is being discussed. However, this may be a misrepresentation of what Sider is trying to express. Moreover, it's not clear that Lewis has such a requirement for his notion of a mereological collection. It's certainly not a result of any of his three axioms of mereology (Lewis 1991, 74). As a result, I want to offer a different and more charitable interpretation of what I think Sider is trying to express.

As it turns out, van Inwagen (1990) has a nice discussion of such an interpretation. I should note that, in the following discussion of van Inwagen's mereological language, much of the language used may be considered unrefined and problematic. My goal here is not to critically analyze van Inwagen, but rather offer a glimpse of van Inwagen's mereological language so that I may use it to reinterpret Sider's claim in a way lacks the obvious predication problems already discussed.

In *Material Beings* (1990), van Inwagen discusses at length, how a nihilist can "paraphrase the sentences of ordinary language that most philosophers would say expressed facts about things like chairs in language that refers to no material things but simples" (van Inwagen 1990, 108). van Inwagen provides three types of paraphrase:

using plural quantification, using sets, using neither plural quantifiers nor sets. It is the third type (neither plural quantifiers nor sets) that Lewis would offer.[15]

van Inwagen offers a paraphrase that achieves his goal of not being committed to anything other than simples while not requiring "the apparatus of plural quantification or to assert the existence of sets" (van Inwagen 1990, 110). This is done using spatial regions. For an example, van Inwagen writes the following:

> ...one might render 'Some chairs are heavier than some tables' in this way:
>
> There is an x such that x is a region of space and the things that fall within x are arranged chairwise and there is a y such that y is a region of space and the things that fall within y are arranged tablewise and the that fall within x are heavier than the things that fall within y. (van Inwagen 1990, 110)

Using van Inwagen's spatial region interpretation scheme, I can return to Sider and more accurately capture what he has in mind. In saying that Lewis's understanding of table is, "things whose parts are simples arranged tablewise," Sider may have in mind the following: a table is to be understood as a region of space where the parts within that region of space are arranged tablewise. By using the "region of space" locution of van Inwagen, I can interpret Sider in a way that does not attribute to Lewis a commitment to ontologically innocent plural quantification. While it is the case that Sider and Lewis would both grant ontologically innocent plural quantification, I will table that issue here since I have already addressed the consequences in chapter one.

Moreover, with the spatial region interpretation, Sider would not be committing Lewis to a view where a mereological collection requires a distributive predicate. While

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[15] For Lewis, plural quantification is not a necessary feature of his ontologically innocent mereology. Lewis writes, "Plural quantification is innocent: we have many things, we speak of them as many, in no way do we mention one thing that is many taken together. Mereology is innocent in a different way: we have many things, we do mention one thing that is the many taken together..." (Lewis 1991, 87). Lewis refers to the position that combines plural quantification and mereology as megethology: "Mereology is the theory of the relation of part to whole, and kindred notions. Megethology is the result of adding plural quantification... to the language of mereology" (Lewis 1993, 3)

it may be the case that a distributive predicate is required (see chapter one), it is best for Sider to leave the question open. Using spatial language to interpret the arrangement allows for this. The claim that a certain region of space has within it particles that are arranged tablewise, does not mean that the particles must *individually* instantiate the predicate 'arranged tablewise.' That would be problematic. Rather, the collective predicate can apply to the group of particles.

With these qualifications, I have tried to offer an interpretation of Sider that is charitable in the sense that it avoids the immediate problems already addressed. Thus, I take Sider to be saying that Lewis's 'table' should be understood as a mereological collection in which the spatial region that the collection identifies is composed of a tablewise arrangement of parts. What remains is an account of when a spatial region has parts that compose something further. Thus, I return to a discussion of Lewis's mereology, but this time I will focus on the axiom of Unrestricted Composition.

II.VIII – Unrestricted Composition

Lewis's axiom of Unrestricted Composition is stated as follows: "Whenever there are some things, then there exists a fusion of those things" (Lewis 1991, 74). This is a bare statement of the very strong position expressed by this axiom. Lewis describes the axiom and its implications as follows:

> I say that whenever there are some things, they have a fusion. *Whenever*! It doesn't matter how many or how disparate or scattered or unrelated they are… There is still a fusion. So I am committed to all manner of unheard-of things: trout-turkeys, fusions of individuals and classes, all the world's Styrofoam, and many, many more. (Lewis 1991, 80)

Thus, Lewis's mereology places no restriction on composition. There is no limit to the possibilities , so in every case of material objects, there is always a fusion.

On this view, whenever there are simples arranged tablewise, there is also a fusion of those simples. If a table is defined as a fusion of simples arranged tablewise, then Lewis will grant a table in every case there are simples arranged tablewise. That is, in any case where there is a spatial region in which simples are arranged tablewise, there is a table fusion. Even if Lewis would not use the language of "simples," it would not matter. Since anything can compose a fusion, and simples arranged tablewise are things, then whenever there are simples arranged tablewise there is a fusion of those things, namely, a table.

My claim here is that, whatever else might characterize Lewis's notion of mereology, Unrestricted Composition is central to his view. Accordingly, this should be taken into consideration when Sider is claiming that the notion of 'table' that Lewis has in mind is mereological. Sider writes that Lewis's mereological collection should be understood as follows: "a 'collection' of things that ϕ is a thing whose *parts* ϕ" (Sider 2009, 388). My claim is that, in addition, we should take Lewis to be claiming: *whenever* there are parts that ϕ, there is a collection of things that ϕ. Thus, for Lewis, there is a table if there are simples arranged tablewise.

If that is the case, then Lewis's mereological definition of 'table' is such that a commitment to simples arranged tablewise entails a commitment to tables. However, the nihilist, according to Sider, does just that. Sider explains:

> DKL's 'table' is plausibly taken as meaning 'collection of simples arranged tablewise'… Since PVI thinks that there are no composite material objects whatsoever, he thinks that there simply are no collections of simples arranged tablewise. To be sure, he admits simples arranged tablewise (here I quantify plurally), but he rejects the existence of (mereological) *collections* of them. (Sider 2009, 388–389)

Here Sider is claiming that the nihilist is admitting simples arranged tablewise and denying a collection of them. This cannot be the case according to Lewis's view. Lewis

would claim that the nihilist is committed to tables if committed to simples arranged tablewise. This follows from Lewis's claim that "whenever there are some things, then there exists a fusion of those things" (Lewis 1991, 74).

This all seems counterproductive to Sider's goal. Sider's argument against the deflationist is that the ontologists agree on the definition of 'table' but disagree on whether or not they exist. If the ontologists accept Lewis's mereological definition, where composition is unrestricted, then the ontologists cannot disagree on whether or not they exist. They would both have to agree that tables do exist unless they disagreed on the definition of 'table', but then that is the deflationist claim. Thus, the deflationist conclusion cannot be blocked if the ontologists agree on a definition of 'table', where 'table' is defined as simples arranged tablewise and composition is unrestricted. Given my conclusion in section V that composition is not an ontologically innocent relation, Sider has two options: deny that the nihilist admits simples arranged tablewise or refute the axiom of Unrestricted Composition.

The first option is to say that the nihilist will not admit simples arranged tablewise. If that were the case, then the nihilist could deny the existence of tables. However, I see no reason for the nihilist to not admit simples arranged tablewise. In his discussion on the matter, van Inwagen writes, "I shall help myself to three variably polyadic predicates: 'are arranged chairwise', 'are arranged tablewise', and 'are heavier than'"(van Inwagen 1990, 109). I see no reason to deny van Inwagen these predicates. van Inwagen wants to deny composite material objects, but not simples themselves. Moreover, van Inwagen does not want to deny that simples can be arranged tablewise. For van Inwagen, simples can be arranged tablewise in the same way they can be arranged into any other multitude of things.

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Sider's second option is to deny the axiom of Unrestricted Composition. This is problematic for two reasons. First, it would undermine his claim that we are to understand 'table' as a mereological collection in Lewis's sense, since Unrestricted Composition is an axiom of Lewis's mereology. Second, Unrestricted Composition, although controversial, is a defensible position.[16] I say controversial, because many find the principle of Unrestricted Composition results in all sorts of strange fusions.

These strange fusions are supposed to be sufficient for rejecting Unrestricted Composition. Yet, to restrict composition results in problems with vagueness, and it is this concern with vagueness on which Lewis (1991) and Sider (2001) defend Unrestricted Composition. Specifically, they use what has come to be known as the argument from vagueness to show that composition cannot be restricted. I turn now to an analysis and defense of the argument from vagueness.

II.IX – Argument from Vagueness

The argument from vagueness attempts to prove that composition must be unrestricted by showing that restricting composition is impossible. In this section I will, following Lewis (1986) and Sider (2001), defend the argument from vagueness. While Lewis does not have a systematic presentation of the argument, the main idea is captured in the following:

> To restrict composition in accordance with our intuitions would require a vague restriction… But if composition obeys a vague restriction, then it must sometimes be a vague matter whether composition takes place or not. And that is impossible. (Lewis 1986, 212)

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[16] For discussion critical of Unrestricted Composition see Elder (2008), van Inwagen (1990), Koslicki (2003, 2008). For discussion supporting Unrestricted Composition see Lewis (1986), Rea (1998), Van Cleve (1986), Varzi (2005).

A systematic formulation of Lewis's argument from vagueness is presented by Sider (2001). What follows is an analysis of Sider's presentation of the argument.

Sider first premise is as follows:

> P1: If not every class has a fusion, then there must be a pair of cases connected by a continuous series such that in one, composition occurs, but in the other, composition does not occur. (Sider 2001, 123)

The notion of continuous series is complex, but Sider's general claim is that, if composition is restricted, then there is at least one case in which composition does not occur. Restricted composition is not the claim that there is never fusion, rather it is the claim that not every class has a fusion. Thus, if composition is restricted, then there is at least one case where composition occurs and one case where composition does not occur.

Sider discusses a couple of objections, whose resolutions should be noted. The first is that, a nihilist will not grant this premise. For my discussion of the argument from vagueness, I will not address nihilism, since using nihilism to reject the argument from vagueness only helps the deflationist. The second objection is that there exists a pair of cases not connected by a continuous series, but Sider does not need this to be the case. As Sider writes, "PI only requires that *some* pair of cases differing over composition be connected by a continuous series, if composition is restricted" (Sider 2001, 123). Aside from these objections, I can think of no other reason to deny Sider the first premise.

Premise two of the argument from vagueness continues with this notion of continuous series:

> P2: In no continuous series is there a sharp cut-off in whether composition occurs. (Sider 2001, 124)

Here Sider is claiming that a continuous series, as an artificial construct, can be considered to have so many members that the member in which composition does not occur is indistinguishable from the member in which composition does occur. The result

is that, in a continuous series, a change in composition must occur gradually. Sider argues that, "there would seem to be something 'metaphysically arbitrary' about a sharp cut-off in a continuous series of cases of composition" (Sider 2001, 124).

The third and final premise of the argument from vagueness is as follows:

> P3: In any case of composition, either composition definitely occurs, or composition definitely does not occur. (Sider 2001, 125)

In defense of P3, Sider argues that 'case' is to be understood as a class that is defined in terms of its members. Thus, a case of composition is a class that has "precisely determined membership" (Sider 2001, 125). Sider is trying to avoid any objection from semantic indeterminacy which Lewis spends much time addressing in his version of the argument. Sider summarizes the view by writing, "There is no vagueness 'in the world'; all vagueness is due to semantic indecision" (Sider 2001, 125).

While this may be the case, Sider chooses to strengthen the argument by arguing for the impossibility of semantic vagueness using numerical sentences. Sider writes, "Lewis's assumptions about vagueness can then be replaced by weaker assumptions that concern only logical vocabulary" (Sider 2001, 127). What Sider has in mind is that syntactic logical notions are not vague. Sider uses this in a *reductio* to defend the third premise. In short, if the third premise is not the case, then there would be at least one logical sentence that is vague. Since, Sider argues, logical sentences cannot be vague, P3 must be the case. While I have no issues with the claim that logical operators are not vague, more should be said about syntactic variables. For example, predicate logic contains predicates which may or may not be vague.

Sider choose "numerical sentences" to isolate the discussion of predicate vagueness. He choose to discuss a sentence making a claim about a finite number of concrete objects. The idea is that in a finite world, one could express the number of

concrete objects determinately using predicate logic. In such a case, the logical sentence would contain only one predicate, namely, 'is a concrete object'. To establish the conditions under which this predicate obtains, Sider argues that this would be done by constructing a determinate list of abstract objects, and claiming that an object not in the list is concrete. Thus, to instantiate the predicate 'is a concrete object' is to satisfy the condition that the object is not included in the list of abstract objects.

One might think that Sider is just pushing the problem further down the line. That is, being a concrete object will be determinate only if the objects of the list of abstract objects are determinate. In response, Sider claims, "the concreteness predicate, 'C', presumably has precise application conditions since it was defined by a list of predicates for fundamental ontological kinds that do not admit of borderline cases" (Sider 2001, 127).

What I take Sider to be claiming is that, the conditions for the predicate are precisely defined. Vagueness, if it is to be found, cannot come from the specifications involved in defining the predicate. However, I agree with Sider that this is the only place vagueness can be located. Thus, P3 must be the case. Notice that this results in a conclusion contradictory to P2. In P2, composition in a continuous series was claimed to occur gradually, yet, in P3 the claim is that composition in a continuous series cannot be gradual. Together, P2 and P3 negate the consequent of the conditional in P1. Therefore, the antecedent, that composition is restricted, must be false. Thus, the argument from vagueness concludes that composition must be unrestricted.

If composition is unrestricted, then every admission of a plurality of material objects results in the admission of a collection. Thus, when Sider's nihilist admits simples arranged tablewise, the nihilist is committed to a mereological collection. Now, the

nihilist will not accept Unrestricted Composition. This was addressed in the discussion of P1. However, Sider's argument relies on the ontologists using the same definition of 'table', and for Lewis that definition would be in terms of a mereological collection. Lewis's understanding of mereological collection entails Unrestricted Composition. Thus, the nihilist must either accept Unrestricted Composition and agree with Lewis on the definition of 'table', or the nihilist can deny Unrestricted Composition and use a different definition of 'table'.

If van Inwagen accepts Lewis's definition of 'table', then by admitting simples arranged tablewise, van Inwagen is committed to the existence of tables. If van Inwagen denies Unrestricted Composition, and if plural quantification is ontologically innocent, then van Inwagen can admit simples arranged tablewise and deny the existence of tables. However, if van Inwagen denies Unrestricted Composition, then Lewis and van Inwagen will not have the same definition of 'table'. In either case, the deflationist argument from equivocation goes through.

II.X – Predicate Equivocation Maintained

My aim in this chapter, has been to show that the deflationist argument from equivocation is successful for a reason other than the ontological innocence of plural quantification. Sider's main thesis against the deflationist is that the ontologists can agree on the definition of 'table' and yet still disagree on their existence. Sider systematically presents and argues against three candidate definitions. For each definition, Sider attempts to show that either the ontologists do not have that definition in mind or the definition is correct and the ontologists agree on it.

The three definitions of 'table' are a result of the three interpretations of 'collection' that occur in the definiens. A necessary condition for being a candidate interpretation of 'collection' is that the interpretation corresponds with David Lewis's views on the matter, namely, his mereological views. Accordingly, the first candidate meaning is one in which the principle of Composition as Identity makes 'collection' superfluous.

In section IV, I addressed the Composition as Identity thesis states that a mereological collection is nothing over and above its parts. The collection is, in a way, identical to its parts. Thus, Composition as Identity is required for Lewis's claim that mereology is ontologically innocent. The idea is that, given a commitment to some things, it is no further commitment to grant a mereological collection of those things. The result is that, if van Inwagen asserts the proposition 'There exist simples arranged tablewise', then the proposition 'There exists a collection of simples arranged tablewise' carries no further ontological commitment. Thus, the problem for Sider is that, if Composition as Identity is granted, then there is no substantive ontological debate.

However, in section V, I provide alternative argumentation for why we should not accept ontologically innocent mereology. That is, I looked at Byeong-Uk Yi's argument against Lewis's defense of Composition as Identity. I conclude that Lewis's argument for Composition as Identity is problematic; thus, the composition relation is not ontologically innocent in the way that identity is. This helps Sider's case, since Composition as Identity is a thesis which supports and is sufficient for the deflationist conclusion. Thus, in denying the ontological innocence of the composition relation, I support Sider's goal of denying the deflationist conclusion for the first candidate definition.

The second candidate definition, addressed in section VI, is set-theoretic. That is, 'table' is to be defined as a set-theoretic collection of members arranged tablewise. There is not much to say in regards to this candidate definition, since neither ontologist has a set-theoretic definition in mind. Both ontologists are acutely aware of the distinction between parthood and set membership and are not conflating the two notions. This candidate definition was discussed for completeness, and to show that it is not a live option for the deflationist.

In section VII, I discuss Lewis's mereological axiom, Unrestricted Composition. Whereas, the Composition as Identity principle aims to support the ontological innocence of mereology, Unrestricted Composition aims to provide an account of when a collection should be posited. Given Unrestricted Composition, whenever there are some things, there is always a collection of those things. Thus, Unrestricted Composition, if granted, would require the nihilist to be committed to a collection if committed to simples arranged tablewise.

While Unrestricted Composition may seem problematic, the consequences of restricting composition are even more so. In section IX, I look at Sider's version of the argument from vagueness which seeks to prove that composition *cannot* be restricted. The basic strategy of the argument is to grant restricted composition and show that doing so entails contradictory propositions. Thus composition cannot be restricted.

I have argued against the Composition as Identity principle, concluding that a commitment to a mereological collection is not an ontologically innocent commitment. Further, I have argued for Unrestricted Composition; thus, a commitment to some things entails a commitment to a mereological collection of those things. The deflationist aims to show that the ontological debate about the existence of tables is not substantive. The

reason, the deflationist claims, is because the ontologists are equivocating on the definition of 'table'.

van Inwagen will grant the existence of simples arranged tablewise; thus, I take van Inwagen to be committed to a mereological collection of simples arranged tablewise. Further, this is not an ontologically innocent commitment. Therefore, if 'table' is defined as a collection of simples arrange tablewise, then van Inwagen is committed to the existence of tables. Consequently, if van Inwagen denies the existence of 'tables', he must have a different definition of 'table' than Lewis. Either the debate is not substantive or the ontologists are equivocating on the definition of 'table'. Thus, the deflationist argument from equivocation remains.

CHAPTER THREE: QUANTIFIER VARIANCE AND

META-META-ONTOLOGICAL DEBATES

III.I – Introductory Remarks

Thus far, I have addressed Sider's response to the deflationist that claims there is an equivocation on the meaning of 'table'. I have argued that Sider was not able to block the deflationist argument for a number of reasons. So, it seems that I have at least allowed for the deflationist position to be maintained. That being the case, it is an interesting question as to whether or not the deflationist program applies not only to ontological debates, but also to meta-ontological debates.

An analysis of this question will be at the meta-meta-ontological level. It is this analysis which I would like to pursue in this chapter. The meta-meta-ontological analysis will focus on the meta-ontological debate between Sider and Hirsch. I will look at an article by Gerald Marsh (2010) in which he claims that Eli Hirsch's deflationist program either favors Marsh's meta-meta-ontological position, or it is self undermining.

Before pursuing the meta-meta-ontological analysis, I need to finish my discussion of Sider's debate with the deflationist. I have yet to discuss Sider's views on quantifier variance which is the deflationist program defended by Hirsch.[17] Thus, the strategy for this chapter is to first narrow the discussion by getting clear on Sider's view

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[17] For representative examples see Hirsch (2002, 2007, and 2009)

of the deflationist program. This will motivate the discussion of quantifier variance in which I will look at Sider's presentation of quantifier variance and his response to it.

Once Sider's response is presented I will look at Hirsch's defense of the view. In this way, I will complete my investigation into Sider's response to the deflationist and provide context for my analysis of Marsh's discussion. I will investigate Marsh's article before offering my own critical analysis and presenting what I think to be a fundamental problem for debates of this nature, but first I must finish my discussion of Sider.

III.II – Sider's Target Deflationist

Sider's taxonomy for the ontological deflationist positions includes the following four positions: equivocation, indeterminacy, obviousness, and skepticism (2009, 386). I will not address the adequacy of this taxonomy, but I should mention that although these labels are conventional, Sider's motivations are consistent with others.[18] The deflationist position maintains that something is wrong with, for example, the ontological debate about composite material objects. When the universalist asserts 'There exist tables' and the nihilist asserts 'There do not exist tables', each asserts a true proposition. Since the propositions are contradictory, the deflationist concludes that they are both true because of some underlying mistake in the argument.

My concern will not be with the claim that truth value of the propositions cannot be determined (indeterminacy), nor am I concerned with the view that upon conceptual reflection the truth values are obvious (obviousness). Rather, I am concerned with the

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[18] Philosphers typically choose a label for what they take to be central to the debate. For example: Karen Bennett prefers *dismissivism* and writes, "Neither 'skepticism' nor 'deflationism' are appropriate as a *generic* label" (2009, 39); Cian Dorr uses *conciliatory semantics* (2005, 237); Matti Eklund uses *ontological pluralism* (2009, 130); John Hawthorne uses *superficialism* (2009, 215); and Matthew McGrath uses *conciliatory metaontology* (2008, 482)

deflationist claim that the ontologists are equivocating on a key component of the propositions. Sider focuses on equivocation, but claims that his arguments carry over to the other forms (2009, 387). Further, Sider provides a nominalist formulation to satisfy nominalist considerations. The additional deflationist positions and nominalist formulations will not be my concern. I will remain neutral on these claims and focus on Sider's responses to the deflationist concerned with equivocation.

The main idea behind the deflationist argument from equivocation is that the ontologists are equivocating on crucial terms. In the first two chapters, I addressed the deflationist argument from equivocation that claims the term that is equivocated on is the predicate 'is a table'. This is not the only term that the ontologists can equivocate on. To give a full account of the deflationist argument from equivocation, I must also address the possibility that the ontologists are equivocating on the existential quantifier 'there exist'.

Thus, the deflationist I have in mind for this chapter is claiming that the ontologists agree on the meaning of 'table' and the conditions required to be a 'table', but they disagree on the meaning of 'there exist'. The equivocation is claimed to be on the quantifier. This position has come to be known as *quantifier variance*.[19] Quantifier variance is the other half of the deflationist argument from equivocation; therefore, to have a full understanding of this deflationist argument will require an investigation into equivocation of quantifiers.

With such basic propositions in question, I feel confident that an investigation into predicate and quantifier equivocation will be sufficient to exhaust the possibilities of equivocation. However, I will not argue for this here and will simply grant Sider the

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[19] For this view see especially Hirsch (2002, 2007, and 2009).

claim that, "they [ontologists] must mean something different by the predicate 'table' or by the quantifier 'there exist' (or by both)" (Sider 2009, 387).

This inclusive disjunction has been the focus of my work. Sider's strategy (2009) is to respond to the deflationist position by denying both disjuncts. Sider moves quickly in his response to the first disjunct, predicate equivocation, and focuses most of his time on the second disjunct, quantifier variance. At this point, Sider cannot be successful, because the disjunct is false just in case both disjuncts are false. I have shown that equivocation on the predicate is not false; thus, the disjunction will be true regardless of the outcome for quantifier variance. Nevertheless, I cannot offer a holistic analysis of the argument from equivocation without discussing both disjuncts. To pursue my meta-level discussion, I will need to have thoroughly addressed both predicate equivocation and quantifier variance.

As a final remark on this disjunction, I want to address what Sider considers to be sufficient motivation for focusing his efforts on quantifier variance. Sider writes the following:

> Here is a further reason not to blame 'table' for the alleged equivocation: PVI and DKL also disagree over sentences not containing 'table'. Consider a world in which there exist exactly two material simples. Of that world, DKL would accept, while PVI would reject:
>
> $$\exists x \exists y \exists z (x \neq y \ \& \ x \neq z \ \& \ y \neq z) \ (2009, 390)$$

Sider concludes that in this sentence, equivocation can only occur on the quantifiers. The implications of this claim will figure prominently in my response to Sider, but I include the argument here as a final motivation for Sider's following conclusion:

> The deflationist must claim that the participants in ontological debates mean different things by the quantifiers. And so, the deflationist must accept that quantifiers *can* mean different things, that there are multiple candidate meanings for quantifiers. (2009, 391)

Ultimately, Sider will reject quantifier variance, but his argument is complex and will require a thorough investigation.

III.III – Quantifier Variance

Sider begins his discussion of quantifier variance by narrowing the meaning of quantifier variance to avoid some of the trivialities that a reader might presuppose. To that end, Sider points out that, since language is conventional, 'there exist' could have come to mean any number of things. This, however, is not what the proponent of quantifier variance has in mind. In his defense of quantifier variance, Eli Hirsch writes, "Nothing is being said here to imply the idealist view that what exists in the world depends on our linguistic or conceptual decisions" (2002, 53).

There is another triviality that Sider wants to avoid, namely, the idea that quantifier variance is simply a label for domain restriction. I find myself considering this as an option at times as well. A proponent of domain restriction would argue that each ontologists makes a true assertion given the choice of domain for their claim. That is, the universalist would be correct because the choice of domain includes tables. The nihilist would also be correct, because they would limit their domain of quantification so that it does not include tables.

Sider, however, wants to argue that it would be a mistake to, "think of the variety of candidate meanings as resulting from different choices of a *domain* for the quantifiers to range over," and that "the quantifier variantist's candidate meanings must be in some sense *unrestricted*" (Sider 2009, 393). I am highlighting this point because I find domain restriction intuitively compelling. This, however, is in conflict with Sider's following argument:

> no speaker of any language can say truly that there exists a domain corresponding to a 'larger' quantifier meaning, for the simple reason that in any language, the sentence 'D is a domain containing everything; and some domain contains an object that is not contained in D' is a logical falsehood. (Sider 2009, 393)

Here Sider is expressing the faulty reasoning behind the nihilist's domain restriction. That is, the claim that the nihilist's proposition 'There do not exist tables' is true because tables are not included in the domain of quantification. This is to say that there is a larger domain that includes tables. Thus, domain restriction is not a candidate interpretation when Hirsch writes, "quantifier variance implies the expression 'there exists something' can be interpreted in a way that makes the sentence true or in a way that makes the sentence false" (2002, 51).[20]

The conclusion to be drawn is that an existentially quantified sentence can be true or false depending on the interpretation of the quantifier and this interpretation is not a matter of domain restriction. That there are multiple candidate meanings for quantifiers is a point that Sider is willing to grant, what remains is to determine "whether any of these interpretations is *metaphysically distinguished*, whether any of them uniquely matches the *structure* of the world, whether any *carves nature at the joints* better than the others" (Sider 2009, 392). For Sider, there *is* a single best metaphysically distinguished quantifier meaning and his defense is centered on his notion of structure and joint carving.[21]

Sider's discussion of structure begins with a motivation of the concept. He writes, "We ought to believe in an objective structure to reality" (2009, 397). For Sider this is because, among other reasons, structure is central to metaphysics and the sciences (2009,

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[20] Like Sider, my goal is to focus the discussion by acknowledging and setting aside the problem of what counts as a domain. I want to focus on Sider's fundamentality rather than problems with generality. How and if quantification can be unrestricted is a fascinating problem in its own right, and I recommend to the interested reader *Absolute Generality* (2006). Especially Fine's "Relatively Unrestricted Quantification" (2006)

[21] Compare with David Lewis discussion of natural properties (1999, 13).

401). Sider provides this motivation to convince the reader of the need for structure, or an analogous fundamental notion, in metaphysics. Once granted, Sider continues with the application of this concept to the problem at hand.

Since structure is getting at fundamentality, Sider offers ways of talking about concepts, namely predicates, that are more fundamental than others. In particular, Sider focuses on Lewis's method of talking about structure. Although he mentions alternative ways of making sense of structure, Sider will ultimately apply the Lewisian understanding to the deflationist argument from equivocation.

On Sider's interpretation, Lewis's method for explicating structure, "presupposes the existence of properties and relations, and its fundamental locution is a *predicate* over these properties and relations: 'is natural'" (Sider 2009, 402).[22] This is worth getting clear about since this *naturalness predicate* is the fundamental concept on which Sider basis his response to the quantifier variantist.

The naturalness predicate can be monadic, '*x* is natural', or two-place, '*x* is more natural than *y*' where *x* and *y* are predicates or relations. The two-place predicate captures Lewis's claim that "it would be best to say that the distinction between natural properties and others admits of degree" (Lewis 1986, 61). Hence, the two-place naturalness predicate is important since it provides a way of comparing properties, relations, etc. to

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[22] Since the predicate is said to be "over" certain properties, I take the predicate to be a second-order property. For a person unsympathetic to second-order logic, Sider's reasoning would not proceed.

one another. As an example, Lewis writes, "The colours, as we now know, are inferior in naturalness to such perfectly natural properties as mass or charge" (1986, 61).[23]

With the notion of structure motivated and the naturalness predicate granted, Sider only has one more step to make before responding to the deflationist. Sider writes the following:

> We should extend the idea of structure beyond predicates, to expressions of other grammatical categories, including logical expressions like quantifiers... Just as with a predicate, once can ask of a logical expression whether it carves the world at the joints. (2009, 404).

Here, once again, Sider goes through a battery of arguments to defend against the view that someone might deny structure for logical expressions, even if they grant structure for predicates. It is in these arguments that I have concerns, namely, against the naturalness/structure notions applied to quantifiers. But let me postpone my response until I offer the conclusion of Sider's response to the deflationist.

If we grant Sider the claim that the notion of structure applies to quantifiers, then we grant, using Sider's term, *quantificational structure*. What this amounts to is that there will be a meaning for the existential quantifier which is more natural than any other. That is, quantifiers will have candidate meanings, but there will be one that, more than any other, matches the objective structure of the world.

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[23] I am concerned that there is a tacit employment of the idea that fundamental irreducible notions are already a part of reality. I do not see this defended, and I worry about circularity. Consider the following: Sider writes, "The predicate for naturalness, for Lewis, is undefined; it is at the very foundation of his metaphysical system" (2009, 402); Lewis writes, "Many philosophers are sceptical about the distinction between natural and gruesome [unnatural] properties. They think it illegitimate, unless it can somehow be drawn in terms that do not presuppose it. It is impossible to do that, I think, because we pressupose it constantly" (Lewis 1986, 63).

Sider's argument proceeds by first supposing that the meaning of a quantifier is a second-order property.[24] Thus, the meaning of the existential quantifier is the "property had by P iff something has P" (Sider 2009, 407). So 'P' has this meaning just in case the property P is instantiated. Given this state of affairs, Sider concludes that the following is the most natural meaning for the existential quantifier:

> *being a property P such that something has P* ("**existence**") (2009, 407; Sider's emphasis)

Here I will designate this "most natural" meaning as the property E_{nat} rather than using the word 'existence' in bold type.

Returning to the deflationist, the argument from equivocation states that the ontologists mean something different by the predicate 'table' or the quantifier 'there exist' or both. Here I am discussing Sider's response to the deflationist that claims the equivocation is on the quantifier 'there exist'; thus, Sider is responding to the quantifier variantist.

The quantifier variantist is claiming that the universalist's quantifier has one meaning, E_U, while the nihilist has another, E_N. Sider's response is that, although it may not fit their use perfectly, the ontologists are both employing the same meaning of 'there exist', namely, E_{nat}. That is, they are using the quantifier with the most natural meaning. Since Sider consider the quantifier the only source of equivocation, his final response to the deflationist is as follows:

> both PVI and DKL mean **existence** by 'there exists', and the dispute is not merely verbal; the thesis of Equivocation is false. (2009, 410).

In the next section I will address some of my concerns regarding Sider's supporting argumentation for this conclusion.

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[24] Sider provides a nominalist formulation for the person "reluctant to reify quantifier meanings" (2009, 408).

III.IV – Quantifier Variance Maintained

Sider has recently written:

> The more I think about these matters, the more convinced I become that whether quantifier variance is true, or whether instead there is a single, most natural, quantifier meaning, is the crux of metaontology. (Sider 2009, 565)

As I have discussed, Sider argues that there is in fact a most natural quantifier meaning. Accordingly, Sider refers to himself as an *ontological realist*. I will refer to the argument in support of this view, the naturalness argument. This argument seeks to deny the quantifier variantist conclusion that the ontologists each assert true propositions given what they mean by the quantifier 'there exists'. This naturalness argument has come under heavy criticism, especially from Eli Hirsch, whom Sider's arguments can be seen as directed toward.[25]

Hirsch (2008) has offered cogent argumentation against Sider's view that there is a single best, most natural, meaning of the existential quantifier. Before looking at Hirsch's criticisms, I need to briefly address an assumption that Sider makes in his response to the deflationist. Sider states the assumption and its importance as follows:

> These arguments against deflationism assume that the "force of reference magnetism" is strong enough to outweigh a failure of **existence** to match the use of 'there exists'... If the magnetic force is weak, then a defender of the thesis of Equivocation might, I concede, justly claim that PVI and DKL mean different things by 'there exists'. (2009, 411)

Sider, following Lewis, thinks of the natural properties and relations as things which help determine semantic content. That is, semantic indeterminacy can be avoided by appeal to naturalness.

However, Sider, again following Lewis, argues that naturalness is not quite all there is to the story. Naturalness needs *reference magnets* in addition. Roughly, reference

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[25] Hirsch defends quantifier variance in (2002b, 2005, 2008*b*)

magnetism is the idea that the more natural a property is, the more attractive force it will have for use. This allows that, even in cases with competing natural properties, one will be the most natural, namely, the one with the strongest attractive/magnetic force. To demonstrate, Sider uses the thought experiment of the ideal interpreter. The idea is that an ideal interpreter would construct a translation manual for an unknown language by looking at a number of key things. The first is how words are used. Sider writes, "Think of this as determining a set of sentences, Γ... such that the interpreter ought... to interpret my words so that the members of Γ come out true" (2009, 400).

This is analogous to a prominent feature of Hirsch's quantifier variance, his linguistic *principle of charity* which states, "if we are trying to decide between two interpretations of a language, there is a presumption in favor of the one that succeeds better in making people's assertions come out true" (Hirsch 2008*b*, 368). For both Sider and Hirsch, a language should be interpreted such that the sentences in those languages come out true. However, Sider points out that there could be a case where, looking only at use, an ideal interpreter would interpret an intuitively false sentence as true.

To eliminate this possibility, Sider requires that in addition to use, naturalness is taken into consideration. Regarding the ideal interpreter interpreting his language, Sider writes the following:

> Other things being equal, the ideal interpreter must assign natural properties and relations to my predicates. Natural properties and relations are 'reference magnets'. (2009, 400)

The metaphor of magnetism is to help convey the idea that, other things being equal, the more natural a property is, the more appropriate it is as an assignment of a predicate. Recall that to be more natural is to most closely resemble the fundamental structure of the world (carve nature at its joints). Thus, Sider response to the deflationist depends on this

idea that E_{nat} is more natural, is a stronger reference magnet, than other candidate meanings for the ontologists use of 'there exists'. If it is not, then as in the quote above, Sider must allow the possibility that the ontologists are equivocating on the quantifier.

Sider argues that, if this is a problem, the debate can be setup in an artificial language.[26] In short, Sider claims that if the property E_{nat} is not magnetic (natural) enough, then the debate can be recast in a new language where it is. This new language is what Sider calls, *Ontologese*. This new language is constructed such that the existential quantifier is defined as expressing the property E_{nat}. Thus, in Ontologese, any debate that employs the existential quantifier will involve the existential quantifier that expresses the property E_{nat}. Sider concludes that the ontologists would still disagree if the ontologists construct their argument in Ontologese; therefore, Sider concludes that the debate cannot be the result of equivocating on the quantifier.

Hirsch's response to Sider will focus on this ideal language, Ontologese, and its motivations, namely, naturalness and reference magnetism. What Sider does is use naturalness and reference magnetism to identify the existential quantifier that most accurately carves nature at the joints. Sider writes, "existence is a logical joint in reality" (2004, 646). So Sider is looking for the quantifier that captures the quantificational structure of the world. This quantifier, E_{nat} is thus said to have such magnetic force that 'there exists' must refer to E_{nat}.

Hirsch argues that what Sider has done is taken an ontological debate about whether or not tables exist, and recast it as a metaontological debate, in the language Ontologese, about "reality's logical joints and quantificational structure" (Hirsch 2008*a*, 521). Hirsch's criticism is that Sider has just constructed another verbal debate, but at

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[26] This is reminiscent of Cian Dorr's strategy using different tribal languages (2005, 236).

another meta-level. It is still a verbal debate, just formulated in Ontologese, which can be thought of as at the meta-meta-level. That is, Hirsch claims that Sider made no progress in moving to a higher level. What remains is an argument to show that the metaontological debate is verbal, but a summary of Hirsch's thesis will be helpful. Hirsch succinctly characterizes his criticism as follows:

> the neo-ontological [metaontological] disputes about which sentences are true in Ontologese, the language that is aligned to the world's quantificational structure, merely recapitulates the traditional ontologists' verbal disputes about what exists. (2008*a*, 521)

Briefly, Hirsch argues that Sider's strategy for introducing Ontologese does not avoid the problems it is trying to solve. Sider's translation instructions involve the same notions of naturalness, fundamentality, and quantificational structure. The individual dissatisfied with these notions at the ontological level, will find no satisfying account at the metaontological level.

Hirsch offers a formalization of Sider's argumentation here. Regarding choosing what language to deem Ontologese, Hirsh argues that whatever language one is currently using will, according to Sider's criteria, be the ideal language. That is, the language which most closely corresponds to the quantificational structure of the world. Hirsch writes, "Sider's explanations of quantification structure... imply that the following two sentence-schema are correct in all languages" (2008*a*, 522). The first is as follows:

> (1) A necessary and sufficient condition for an ontological language *L* to be aligned to the world's quantificational structure is that any sentence in *L* of the form "There exists such-and-such" is true iff part of the world's quantificational structure consists in the fact that there exists such-and-such. (2008*a*, 522)

Here I take Hirsch to be claiming that an ontological language corresponds to the world's quantificational structure if a disquotational biconditional for an existential claim

obtains. That is, any given language *L* corresponds to the world's quantificational structure just in case—'*P*' is true in *L* iff *P*—where '*P*' is an existential claim made in *L*.

The following is the second sentence-schema that Hirsch presents:

> (2) There exists such-and-such iff part of the world's quantificational structure consists in the fact that there exists such-and-such. (2008*a*, 522)

Here Hirsch is highlighting the fact that Sider's requirement for the correct ontological language requires an understanding of the world's quantificational structure. Notice the relation between (2) and the disquotational biconditional in (1).

Regarding (2), one might ask: How does one know if the world's quantificational structure consists in a certain ontological fact? On this point, Sider concedes that his arguments, "make an assumption about the true theory of content determination: that this theory wieghts naturalness heavily enough to overcome any mismatch there may be between **existence** and the use of 'there exists' " (2009, 411).

So, once again, Sider appeals to naturalness to rank languages, but as Hirsch notes, (1) and (2) together reveal that, regardless of what language is chosen, it can fulfill the requirements to be the ideal language. Any language can fulfill (1) and (2) so long as the speaker considers the language more natural than others. Thus, Hirsch concludes:

> (3) This ontological language (the one currently being used), but no other ontological language, is aligned to the world's quantificational structure. (2008*a*, 522)

The significance here is that in addition to any language being a candidate for being the ideal language, once chosen, all others are precluded from being candidates. So, Hirsch concludes:

> The answer to Sider's question, "Which ontological language is aligned to the world's quantificational structure?" depends on which language one is speaking. The question is purely verbal; it has no substantive content. (2008*a*, 522)

Here I agree with Hirsch, and the criticisms seem unavoidable for Sider. However, it should be noted that this is only a problem for the person that will not grant the Sider's notion of reference magnetism. This is significant for Sider, however, because Sider appeals to the ideal language to escape the dependence on reference magnetism. As Hirsch's argument shows, Sider is not successful in avoiding the dependence.

Thus, Sider's response to the deflationist will depend on one's take on reference magnetism and naturalness. The naturalness concerns are unavoidable, even if Sider tries to formulate the debate at a higher meta-level, say, in Ontologese. While this conclusion does not result in a rejection of Sider's response to the deflationist, it does mark the point of disagreement. What one decides regarding the Sider/Lewis idea of indefinable fundamental naturalness will determine whether or not Sider's response to the deflationist is successful.

III.V – Is Sider-Deflationist debate merely verbal?

Hirsch's criticisms of Sider followed Sider from the meta-ontological level to the meta-meta-ontological level. There is a question which I think follows naturally from this discussion: Is the meta-meta-ontological debate between Sider and Hirsch merely verbal? In a recent article, Gerald Marsh (2010) answers by saying that if Hirsch's criteria for verbal debates is used, then yes. In this section, I will evaluate Marsh's argumentation and highlight those areas that may be problematic. I will offer my critical remarks in the next section.

Central to Marsh's discussion is the notion of Hirsch's interpretive charity and Sider's naturalness considerations. However, Sider's goal is to show that the ontological debate about composite material objects is substantive. Hirsch concludes that the debate

is not substantive, but rather is merely verbal. What I am concerned with is whether or not Marsh is correct when he claims that Hirsch's reasons for claiming the debate is verbal, make his own debate with Sider verbal.

Central to Marsh's discussion is Hirsch's interpretive charity discussion. Hirsch writes, "central to what I take to be the correct view of linguistic interpretation is an appeal to 'use,' but it must be understood that the only way to understand that appeal is in terms of what has been called the 'principle of charity'" (2009, 240).

Regarding the principle of charity, Hirsch has three central considerations:

Charity to Retraction: If the community retracts a set of sentences that were previously accepted, then considerations of charity must favor an interpretation which makes the sentences false. (2008*b*, 368)

Charity to Understanding: members of the linguistic community generally understand what they are talking about to the extent at least that they do not make a priori (conceptual) mistakes about seemingly uncomplicated judgments. (2008*b*, 370)

Charity to Perception: any language contains sentences used to make perceptual reports, and that these reports are generally accurate (to a fair degree of approximation). (2008*b*, 372)

Collectively these considerations serve as Hirsch's criterion for judging, in addition to use, linguistic interpretation. I have already addressed Sider's interpretive program, namely, that in addition to use, an ideal interpreter must "assign natural properties and relations to my predicates" (Sider 2009, 400).

Returning to the ontological debate about composite material objects, Hirsch claims that the ontologists equivocate on the meaning of the quantifier, because we should interpret the debate so that each ontologist makes claims that are true. Since the only location for interpretive charity is the quantifier 'there exists', Hirsch concludes that this is where the meaning changes for the ontologists; hence, quantifier variance. Sider

disagrees, and thinks that naturalness considerations entail a single understanding of 'there exists' . That understanding is the one that carves nature at the joints.

Consider two linguistic communities that speak plain English.[27] In one community, everyone agrees with Sider. This will be the S-community which speak S-English. In the other community, everyone agrees with Hirsch. This will be the H-community which speak H-English. Now consider the S-community and the H-community disagreeing about the truth or falsity of quantifier variance. That is, the truth or falsity of the position that there are multiple candidate meanings for quantifier expressions that are equally natural and inferentially adequate.[28]

Marsh (2010, 463) proceeds by introducing the debate as follows:

> (S1) Quantifier variance is false.
>
> (H1) Quantifier variance is true.
>
> where (S1) is in S-English and (H1) is in H-English

In S-English, (S1) is true, but false in H-English. Similarly, (H1) is true in H-English, but false in S-English. As in the case of the ontological debate, this meta-ontological debate has the appearance of being genuine. By that, I mean that it looks like Hirsch and Sider disagree on whether or not quantifier variance is true or false. However, at the meta-meta-ontological level with which I am working, the debate is not substantive because each will assert a true proposition when stated in their own language, or at least that is what the deflationist would desire.

To proceed with the analysis, Marsh considers two ways in which, in the spirit of Hirsch's deflationism, (S1) and (H1) can be interpreted such that they both come out true.

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[27] Here I am following Hirsch's style of presenting the debate, see for example (2009, 65 ff.).

[28] Compare with Sider's definition of quantifier variance (2007*a*, 209) and (2009, 393).

That is, how in H-English, one would interpret (S1) and (H1) so that both are true. The

first interpretation is disquotational, and the second is conciliatory (2010, 463). The

disquotational interpretations are as follows:

> (S1D) 'Quantifier Variance is false' is true in S-English iff Quantifier Variance is
> false.
>
> (H1D) 'Quantifier Variance is true' is true in H-English iff Quantifier Variance is
> true.
>
> where S1D is stated in H-English and H1D is stated in S-English.

Marsh's strategy here, is to use the disquotational interpretations to evaluate this meta-

ontological debate in the same way Hirsch evaluated the ontologists in the debate with

Sider.[29]

The problem with the disquotational interpretation is that, S1D turns out to be

false in H-English, because the left and right side of the biconditional would have

different truth-values for Hirsch. So the disquotational interpretation will not achieve the

goal of providing an interpretation of S1 and H1 such that each come out true. So, Marsh

offers the second interpretation, namely, the conciliatory interpretation.

The goal of the conciliatory interpretation, is to be such that both Hirsch and Sider

would agree that both are true. The conciliatory interpretations are constructed so that

Sider and Hirsch interpret the other using their preferred interpretive method (hence the

conciliatory label). Thus, for Sider, naturalness concerns will be the interpretive

requirement, and for Hirsch, charity.

Following Marsh, I will use the labels (S1C) and (H1C) for the conciliatory

interpretations. The interpretations are as follows:

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[29] Compare this discussion to my presentation (section IV) of Hirsch's disquotational schema as a response
to Sider.

(S1C) 'Quantifier Variance is false' is true in S-English iff if there are natural properties, then it is not the case that there are multiple existence-like candidate Sider-interpretations for expressions like 'there exists' each of which is adequate for describing the world (Marsh 2010, 464).[30]

(H1C) 'Quantifier Variance is true' is true in H-English iff there are multiple existence-like candidate Hirsch-interpretations for expressions like 'there exists' each of which is adequate for describing the world. (Marsh 2010, 464).

where (S1C) is in H-English and (H1C) is in S-English

The logical structure does the work here. In (S1C), the right side of the biconditional is a conditional where in H-English both the antecedent and consequent are false. Thus, the conditional comes out true. Further, the left side of the biconditional is true in H-English. So, since both sides of the biconditional have the same truth-value (true), the biconditional (S1C) is true in H-English. In (H1C), both sides of the biconditional are false in S-English; thus, (H1C) comes out true in S-English. So the conciliatory interpretations are such that both (S1C) and (H1C) come out to be true in their respective languages.

Since Hirsch's deflationist concerns are the reference point, Marsh's argument concludes with an analysis of Hirsch's charity considerations regarding the disquotational and conciliatory interpretations. To summarize, Marsh argues that charity to perception is not applicable to the current discussion, charity to understanding favors the conciliatory interpretations, and charity to retraction can favor either disquotational or conciliatory depending on evidence.

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[30] I should note that Marsh uses"logical kind" where I have used "natural properties." Marsh uses Hirsch's phrase logical kind, but since this is an interpretation of Sider's viewpoint, I chose natural properties. Moreover, Sider chose natural properties because Lewis, from whom Sider adopted the notion, wrote, "The name [natural property] is borrowed from the familiar term 'natural kind'; the contrast is meant to be with unnatural, gerrymandered, gruesome properties" (Lewis 1986, 60). Thus, the label 'natural property' has been thoughtfully selected and should be preserved.

The retracting consideration is guiding the following claim by Hirsch: "A plausibly charitable interpretation must take account of the strong presumption that reasonable people are expected to improve the accuracy of their judgments in the face of additional evidence" (2005, 74). Thus, in evaluating Hirsch's considerations on the different interpretations, Marsh is faced with considering whether evidence will favor the disquotational or conciliatory translations.

In the absence of such evidence, Marsh settles on the following disjunction, "Either there is some evidence such that charity to retraction renders Hirsch's metaontological dispute with Sider genuine or there is not" (2010, 466). From this, Marsh concludes the following:

> either Hirsch's charity principles favor my conciliatory interpretations, or they weigh against Hirsch's claim that certain object-level ontological disputes are merely verbal.(2010, 464).

The dilemma is significant, and Marsh believes that it ultimately shows that, "Hirsch's metaontological dispute with Sider is, by his own lights, merely verbal" (2010, 468). On this point, I disagree with Marsh, and I think the abbreviated argumentation he provides, upon closer examination, will reveal some problems.

III.VI – Meta-Meta-Metaphysics

The claim Marsh is making is that, either Hirsch's charity considerations support Marsh's conciliatory view or they undermine Hirsch's claim that certain ontological debates are merely verbal. That is a strong claim, and one that Hirsch may find problematic. For one thing, it's not clear that Marsh's conciliatory view is stable. By Sider's naturalness criteria, Marsh's conciliatory view is not correct. Marsh anticipates a

response along these lines when he writes, "one might object that either 'Hirsch-interpretation' or 'Sider-interpretation' is a more eligible candidate meaning based on naturalness concerns" (2010, 466).

Hirsch's disquotational sentence-schema comes from his response to Sider (Hirsch 2008*a*, 522). By using the disquotational schema, Hirsch proves that Sider is unable to avoid reliance on reference magnetism. However, this conclusion does not by itself make Sider's response to the deflationist false. For that to be the case, reference magnetism must also be denied. So Sider's appeal to naturalness remains. Thus, it is a consideration that must be addressed by Marsh for his final disjunction to be accepted.

While I have my doubts about Sider's naturalness constraint, the concern here is whether or not those speaking S-English would favor the conciliatory view. In the case of Marsh's conciliatory view, Sider would argue that one interpretation is more natural than the other. In Sider's language, one interpretation carves nature at the joints. By bringing in Sider's naturalness considerations, we once again have a case where we are deciding between competing interpretations. Thus, Marsh has made no progress. My claim is that Marsh has recapitulated the meta-level debate. This claim is the same as Hirsch's claim that Sider was merely recapitulating the traditional ontologists debate (Hirsch 2008*a*, 521).

I believe that Hirsch is right to say that there is a frame of reference for these discussions. Commenting on Sider's attempt to choose an ideal language, Hirsch (inspired by Kripke) writes, "it seems that in asking this he is trying to stand 'both inside and outside language' at the same time" (Hirsch 2008*a*, 521). Accordingly, I take Marsh's arguments to fair no better in this regard. His conciliatory view meets Hirsch's charity

considerations, but does not meet Sider's naturalness considerations. Regarding his conciliatory interpretations, Marsh writes, "It is unclear whether considerations of naturalness favour one interpretation over the other" (2010, 466). This would not be unclear for Sider.

Marsh's argumentative strategy applies to his own conclusion as much as to Hirsch or Sider. Thus, while Marsh's work is a helpful contribution at the interface of the metaontological views of Hirsch and Sider, it suffers the same fate of being trapped by this frame of reference problem. I am not immune to this frame of reference problem either. There is a conclusion, however, that I think can be drawn. I take the meta-meta-ontological discussion to be more than verbal, but I conclude this on pragmatic rather than conceptual grounds. In doing so, I am following what I take to be a significant contribution to the discussion by Sider.[31]

Sider believes that the deflationist thesis of quantifier variance is wrong. Yet, he recognizes how fragile his position is. In an effort to introduce Ontologese he found himself qualifying it to such a degree that the project seemed futile. The perfect language project, if successful, would be tremendously helpful to get all of us (Hirsch, Sider, Marsh, myself, and other metaontologists) out of this frame of reference problem. At this time, I have no argumentation that will solve the case, but at the end of his article, Sider (2009) remains skeptical.[32] In short, he states that his Ontologese project will not convince those predisposed to be deflationist while at the same time recognizing that the

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[31] See his helpful discussion of a holistic approach to metaontology (Sider 2009, 416-420).

[32] Sider writes, "There are, then, various alternatives to ontological realism... And my argument for ontological realism... is by no means conclusive" (2009, 419).

deflationist project will not convince those predisposed to be serious ontologists (Sider 2009, 416).

III.VII – Conclusion

My aim in this chapter has been to locate Sider's target deflationist within the broader deflationist agenda. Sider's target deflationist has in mind an equivocation on one of the central terms in the ontological debate about composite material objects. In the first two chapters, I addressed my concerns about Sider's claim that the equivocation cannot be equivocation on a predicate. In this chapter, I focused on the deflationist claim that the equivocation is on the quantifier 'there exists'.

In doing so, I presented Sider's understanding of quantifier variance and his response based on naturalness and reference magnetism. I conclude that one's views on naturalness will determine the success of Sider's response. I remain skeptical about Sider's appeal to naturalness. In addition to Sider's presentation of quantifier variance, I looked at Hirsch's argumentation in support of deflationism.

Hirsch focuses on a disquotational schema where, using Sider's criterion for an ideal language, any language can fulfill Sider's naturalness criterion so long as the speaker feels it is the most natural. I evaluate and support Hirsch's response to Sider, and conclude that in the absence further argumentation, Sider's naturalness argument is unsuccessful. Hirsch's disquotational schema highlights his goal of trying to interpret debating ontologists so that each comes out saying something true.

This principle of charity requirement could be problematic for Hirsch's program. To that end, I look at an article by Marsh where he presents a seemingly unavoidable dilemma for Hirsch. According to Marsh, Hirsch's charity principles either favor Marsh's

conciliatory interpretation or they work against Hirsch's defense of the deflationist view at the ontological level. The force of the dilemma is that Marsh's conciliatory view shows that the debate between Hirsch and Sider is verbal. Thus, according to Marsh, either Hirsch accepts that conclusion, or he must reject his claim that the ontological debate about composite material objects is merely verbal.

In response, I argue that Marsh fails to fully address Hirsch's deflationist strategy. As a result, I deny Marsh's dilemma. To be charitable, as Hirsch would, Marsh must take into consideration Sider's naturalness argument. By incorporating Sider's naturalness argument, Marsh's discussion ends up being verbal. I conclude that, these debates turn on the language chosen to present the debates in. This results in my claim that there is a frame of reference problem in these debates. Finally, although Sider's naturalness considerations may be a way of escaping the frame of reference problem, it's not at all clear what Sider's naturalness considerations amount to. For that reason, until further cogent argumentation is presented, I do not accept Sider's response to the deflationist.

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