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## Ontological Realism\*

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### I The Ontology of Composite Material Objects

In 1987, Peter van Inwagen asked a good question. (Asking the right question is often the hardest part.) He asked: what do you have to do to some objects to get them to compose something—to bring into existence some further thing made up of those objects? Glue them together or what?<sup>1</sup>

Some said that you don't have to do anything.<sup>2</sup> No matter what you do to the objects, they'll always compose something further, no matter how they are arranged. Thus we learned of the fusion of the coins in our pockets with the Eiffel Tower.

Others said that the objects have to be fastened together in some way, the way the parts of the things we usually think about are. But van Inwagen taught us of people stuck or glued or sewn or fused to each other. Such entanglements, van Inwagen thought, create no new entities.

Others said that *nothing* you could do to the objects would make them compose something further. According to these 'mereological nihilists', tables, chairs, computers, molecules, people, and other composite objects, simply don't exist. All that exist are *simples*—entities without further parts; subatomic particles presumably—which are 'arranged table-wise',<sup>3</sup> 'arranged chair-wise', and so on.<sup>4</sup>

Van Inwagen himself also dispensed with tables and chairs, but departed from the nihilists by admitting people and other living things into his ontology. (Why he spared the living few could tell.)

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<sup>1</sup> See van Inwagen (1987, 1990).

<sup>2</sup> Quine (1976); Lewis (1986, pp. 212–213). Really they had already said that. Allow me poetic license.

<sup>3</sup> van Inwagen (1990) coined this convenient locution.

<sup>4</sup> Cian Dorr (2002, 2005) defends mereological nihilism.

This debate in ontology then got connected to other debates about material objects, especially those concerning persistence over time. For instance, the nihilists have a very quick solution to the old puzzle of the statue and the lump of clay: neither exists!<sup>5</sup>

## 2 Losing One's Nerve

Then some people lost their metaphysical nerve.<sup>6</sup> Whispers that something was wrong with the debate itself increasingly were heard.

Worries about contemporary ontology begin as worries about its epistemology. Today's ontologists are not conceptual analysts; few attend to ordinary usage of sentences like 'chairs exist'. (Otherwise mereological nihilism would not be taken so seriously.<sup>7</sup>) Their methodology is rather quasi-scientific. They treat competing positions as tentative hypotheses about the world, and assess them with a loose battery of criteria for theory choice. Match with ordinary usage and belief sometimes plays a role in this assessment, but typically not a dominant one.<sup>8</sup> Theoretical insight, considerations of simplicity, integration with other domains (for instance science, logic, and philosophy of language), and so on, play important roles. Several epistemic worries then arise. The main ontological positions seem internally consistent and empirically adequate, so all the weight of theory-choice falls on the criteria; but are the criteria up to the task? What justifies the alleged theoretical insights? Are criteria that are commonly used in scientific theory choice (for example, simplicity and theoretical integration) applicable in metaphysics? How can these criteria be articulated clearly? And what hope is there that the criteria will yield a determinate verdict, given the paucity of empirical input?

You'd think this would lead to ontological skepticism, despair of knowledge of the truth about ontology. But that's not what the critics have generally said.<sup>9</sup> These critics—'ontological deflationists', I'll call them—have said instead something more like what the positivists said about nearly all of philosophy: that there is something wrong with ontological questions themselves. Other than questions of conceptual analysis, there are no sensible questions of

<sup>5</sup> Although see McGrath (2005).

<sup>6</sup> As Oliver (1996, §7) put it in a different context.

<sup>7</sup> Hirsch (2002a, 2005).

<sup>8</sup> A big exception is the tradition stemming from David Wiggins (1980). My guess is that the tradition relies on a tacit and unacknowledged deflationary metaontology.

<sup>9</sup> Exception: Karen Bennett (this volume) defends ontological skepticism (for composite and coinciding entities), but rejects the forms of ontological deflationism that I will be discussing.

(philosophical) ontology. Certainly there are no questions that are fit to debate in the manner of the ontologists. To return to the case at hand: when some particles are arranged tablewise, there is no ‘substantive’ question of whether there also exists a table composed of those particles, they say. There are simply different—and equally good—ways to talk.<sup>10</sup>

I, on the other hand, accept a very strong realism about ontology. I think that questions about the existence of composite objects are substantive, just as substantive as the question of whether there are extra-terrestrials; and I think that the contemporary ontologists are approaching these questions in essentially<sup>11</sup> the right way. But I’m not going to try to get you to accept this realism; at least not very hard, and not until the end of the essay. My primary aim is to clarify what is at stake.

### 3 Forms of Ontological Deflationism

Many ontological disputes breed deflationism, but let’s continue to focus on the ontology of composite material objects. Consider a three-way dispute between two ontologists, call them PVI and DKL (for Peter van Inwagen and David Lewis), and an ontological deflationist:

DKL: There exist tables

PVI: There do not exist tables

The deflationist: Something is wrong with the debate

We can distinguish a few complaints that the deflationist might have in mind:

**Equivocation** PVI and DKL express different propositions with ‘There exist tables’; each makes claims that are true given what he means; so the debate is merely verbal

**Indeterminacy** Neither PVI nor DKL expresses a unique proposition with ‘There exist tables’; in their mouths, this sentence is semantically indeterminate over various candidates, some of which make PVI’s claims true, others of which make DKL’s claims true. So the debate is ill-formulated

<sup>10</sup> See Carnap (1950); Chalmers (this volume); Hirsch (2002a, b, 2005, 2007); Peacocke (1988); Putnam (1975, 1987); Sidelle (2002); Sosa (1999); Thomasson (2007, this volume). In addition to these published deflationists, I sense a silent majority watching from the sidelines. For critical discussion see Bennett (this volume); Dorr (2005); Eklund (2006a, 2006b, 2007, 2008, this volume, MS); Hawthorne (2006); Sider (2001a, 2001b (Introduction), 2003, 2004, 2006, 2007a.)

<sup>11</sup> I hedge because I have come to be less of a Moorean than some of my colleagues; I doubt that a theory’s match with “ordinary beliefs” counts for much of anything.

**Obviousness** PVI and DKL express the same proposition with ‘There exist tables,’ but it is obvious by linguistic/conceptual reflection what its truth value is, so the debate is silly<sup>12</sup>

**Skepticism** PVI and DKL express the same proposition with ‘There exist tables,’ but we have no evidence concerning its truth value, so the debate is pointless

I will set Skepticism aside; the deflationism I have in mind is metaphysical/semantic, not epistemic. Equivocation will be my main focus because it is simplest, though what I say will generally carry over to Indeterminacy and Obviousness (Eli Hirsch’s brand of deflationism) as well. Thus, my target deflationist thinks that when DKL says ‘There exist tables’ and PVI says ‘There do not exist tables,’ each speaks the truth given what he means by his sentence.

Notice that my list does not include forms of deflationism that are based on idealism, pragmatism, verificationism, or other forms of global antirealism. The deflationists I have in mind are not opposed generally to metaphysics, and they share the robust realism, so ubiquitous among analytic philosophers, according to which the world is the way it is independent of human conceptualization.<sup>13</sup> Their beef is just with ontology (and in some cases, just with the ontology of composite material objects<sup>14</sup>). Note also that the deflationary positions are formulated in terms of propositions. As is often the case, nominalistic reformulation is tedious but possible; and at any rate, nominalism is not the issue here.

## 4 Blame the Predicates or the Quantifiers?

So, our deflationist thinks that PVI and DKL mean different things by the sentence ‘There exist tables.’ DKL and PVI agree on the syntax of this sentence, so they must mean something different by the predicate ‘table’ or by the quantifier<sup>15</sup> ‘there exist’ (or by both). Which is it?

If it’s the former—if the alleged equivocation is merely over a *predicate*—then PVI and DKL’s dispute is in one respect like a dispute over whether geese live by ‘the bank’, in which one disputant means river bank and the other

<sup>12</sup> I do not mean to include here those (mad-dog) Mooreans who say that the debate is silly because the answer is obvious for Moorean (rather than linguistic/conceptual) reasons.

<sup>13</sup> Such formulations are, of course, notoriously in need of refinement.

<sup>14</sup> Hirsch, for example, is not a deflationist about the ontology of abstracta.

<sup>15</sup> To keep things simple, I am not distinguishing between natural-language and formal-language notions of a quantifier, nor am I distinguishing between ‘there are’ and ‘there exist’.

means financial bank. That kind of verbal dispute is quite familiar, but it's not what's going on in ontology. PVI and DKL are not tacitly employing different standards for what it takes to be a table. They agree on the condition  $\phi$  that a thing must meet in order to count as a table; their disagreement is over whether there exists anything that meets that condition.

Getting absolutely clear about this issue is the absolutely crucial first step in metaontology, so I will belabor the issue a bit.<sup>16</sup> Here's something one sometimes hears, from someone who learns (to his horror) that PVI claims that there are no tables:

PVI denies the sentence 'There exist tables' while admitting that there do exist simples arranged tablewise. But 'table' just means a collection of simples arranged tablewise. That's what *I* mean by 'table', anyway; and presumably that's what DKL means by it as well. Given this meaning of 'table', it is true by definition that if there exist simples arranged tablewise then 'There exist tables' is true. So PVI's rejection of 'There exist tables' must be due to his meaning something different by 'table'.

This very confused paragraph is worth examining closely, in particular the claim that the truth of 'There exist tables' follows from the definition of 'table'.

The paragraph suggests that anyone who accepts the following definition of 'table' is committed to the truth of 'There exist tables':

$x$  is a table  $\equiv_{df}$   $x$  is a 'collection' of simples arranged tablewise

Now, the following sentence is a logical truth:

For all  $x$ , if  $x$  is a collection of simples arranged tablewise then  $x$  is a collection of simples arranged tablewise

Given the definition, the following sentence expresses the same proposition as the logical truth:

For all  $x$ , if  $x$  is a collection of simples arranged tablewise then  $x$  is a table

So PVI, in particular, must accept this final sentence, when 'table' is defined as suggested. But this doesn't yet commit him to the existence of a table in the defined sense. The existence of a table follows from the final sentence only given the added premise that there exists something that counts as a 'collection of simples arranged tablewise'. But PVI does *not* admit this added premise—at least, not given the interpretation of 'collection' under which DKL's 'table' is plausibly taken as meaning 'collection of simples arranged tablewise'. That interpretation is mereological: a 'collection' of things that  $\phi$  is a thing whose *parts*  $\phi$ . Since PVI thinks that there are no composite material

<sup>16</sup> Compare the wise rant in the Introduction to van Inwagen (1990).

objects whatsoever,<sup>17</sup> 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.

Could the author of the paragraph intend ‘collection’ in a set-theoretic rather than mereological sense? PVI may still reject the ‘collections’, for he may not believe in sets. But even if he does believe in sets, the paragraph would still fail in its intent, for it’s clear that DKL does not mean by ‘table’: set-theoretic collection of simples arranged tablewise. DKL (like PVI) is perfectly clear on the distinction between parthood and set-membership, and so is perfectly clear on the distinction between mereological collections and set-theoretic collections. When DKL says that there are tables, he is clear that he means: there are things whose *parts* are simples arranged tablewise.<sup>18</sup>

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’.<sup>19</sup>

Perhaps the author of the paragraph has in mind this definition instead:

There exist tables =<sub>df</sub> there exist particles arranged tablewise

If ‘There exist tables’ is defined in this way, then PVI cannot coherently deny ‘There exist tables’ while accepting that some particles are arranged tablewise. But this definition does not achieve the stated goal of showing that PVI’s definition of ‘table’ differs from DKL’s, for the simple reason that the definition isn’t a definition of ‘table’. It is a definition of the entire sentence ‘There exist tables’.

Indeed, it is hard to know how to take this definition. The definition clearly isn’t an *explicit* definition of ‘table’, since it does not have the form ‘*x* is a table =<sub>df</sub> ...’. It purports to define the entire string ‘There exist tables.’ Are we being told to ignore the grammar of ‘There exist tables,’ ignore the occurrences of the words ‘there exist’ and ‘tables’ therein, and take the

<sup>17</sup> Let us imagine that, unlike Peter van Inwagen, PVI rejects the existence of composite living things.

<sup>18</sup> The author 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’. (Further, if DKL accepts set theory then he will also have a predicate ‘member’, which would surely be synonymous with PVI’s ‘member’ and non-synonymous with DKL’s ‘part’.)

<sup>19</sup> 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 (see Baxter (1988a, b); Sider (2007b); van Inwagen (1994); Yi (1999)). 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.

entire string ‘There exist tables’ as shorthand for ‘there exist particles arranged tablewise’? That would be perverse. ‘There exist’ and ‘tables’ would then be semantically inert in ‘There exist tables’, like the occurrence of ‘nine’ in ‘canine’. In addition to being perverse, the definition thus understood would be ineffective. The author of the paragraph was trying to show that the appearance of ontological disagreement arises from PVI’s idiosyncratic use of ‘table’, but the uses of ‘table’ in question are in semantically significant contexts. Are we instead to take the grammatical structure of ‘There exist tables’ as significant, hold fixed the meaning of one of the words in the sentence, and then interpret the other in such a way that the whole sentence becomes synonymous with ‘there exist particles arranged tablewise’? That is, are we to take the proposed definition as an *implicit* definition of one of the contained words? If the definition is to achieve its goal, then the term that must be held fixed is ‘there exist’. We must hold ‘there exist’ fixed, and interpret ‘tables’ so that ‘There exist tables’ is synonymous with ‘there exist particles arranged tablewise’. But what insures that there is any such way to interpret ‘tables’? A review of our earlier options reveals no such way: interpreting ‘table’ as ‘thing whose parts are simples arranged tablewise’ does not secure the synonymy between these sentences; interpreting ‘table’ as ‘set whose members are simples arranged tablewise’ is clearly not what DKL (or PVI) means by ‘table’; interpreting ‘table’ as ‘simples arranged tablewise’ violates grammar.

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:

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

—that is, ‘there exist at least three things’.<sup>20</sup> But this sentence contains only quantifiers, truth-functional connectives, and the identity predicate. There is clearly no equivocation on the truth functional connectives or the identity predicate. That leaves only the quantifiers.

<sup>20</sup> Could the equivocation be over the predicate ‘is a thing’? In that case, the deflationist would have to admit that a metaphysical dispute could be reinstated simply by recasting the debate as being over whether there exist tables at all, as opposed to tables that are things. DKL and PVI would be happy to rephrase things in this way, since that’s how they understood the debate in the first place. In this vein, I recommend another rant: Williamson (2003, p. 420).

PVI may think that material simples are invariably accompanied by abstract objects (sets for example) in which case he too would accept the displayed sentence. But we could simply restrict the quantifiers in the displayed sentence to concreta.

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. In Hirsch's phrase, deflationists must accept *quantifier variance*.

## 5 Quantifier Variance

Our formulation of quantifier variance needs to be refined. Interpreted flat-footedly, the claim that there are multiple candidate meanings for quantifiers is trivially correct, since language is conventional. We could have treated the bare words 'there exists' as a sign for negation, or a predicate for faculty of Harvard University, or a name for Rudolf Carnap.

To avoid triviality, a first step is to restrict our attention to meanings with a 'shape' that matches the grammar of quantifiers. We may achieve this indirectly, as follows. Understand a 'candidate meaning' henceforth as an assignment of meanings to each sentence of the quantificational language in question, where the assigned meanings are assumed to determine, at the least, truth conditions.<sup>21</sup> 'Candidate meanings' here are located in the first instance at the level of the sentence; subsentential expressions (like quantifiers) can be thought of as having meaning insofar as they contribute to the meanings of sentences that contain them. Thus quantifiers are assured to have meanings whose 'shapes' suffice to generate truth conditions for sentences containing quantifiers.

A second step is to lay down a requirement of inferential adequacy.<sup>22</sup> Call a candidate meaning 'inferentially adequate' if the core inference rules of quantification theory come out truth preserving under the truth conditions it determines. For example, inferentially adequate candidate meanings that count 'John is a philosopher' as true must also count 'Something is a philosopher' as true.

Even thus interpreted, quantifier variance remains trivially correct. Imagine a person who is logically perfect, maximally opinionated, and totally nuts. His beliefs are logically consistent; for every proposition, he either believes it or believes its negation; and he believes that the moon is made of green cheese, that robots are stealing his luggage, and that Ludwig Wittgenstein was history's greatest philosopher. A candidate meaning on which an arbitrary sentence  $\phi$  means the same as the English sentence 'according to the (actual) beliefs of

<sup>21</sup> For simplicity, take the grammar of this language to be like that of first-order logic.

<sup>22</sup> Compare Hirsch (2002b, p. 53).

the opinionated person,  $\phi^\top$  is then inferentially adequate: the inference rules of quantification theory come out truth-preserving because our opinionated person, being logically perfect and maximally opinionated, believes every logical consequence of everything he believes. Likewise for an interpretation according to which an arbitrary sentence  $\phi$  means the same as the English sentence 'At  $w$ ,  $\phi$ ', where  $w$  is any chosen possible world.<sup>23</sup> Inferentially adequate candidate meanings are cheap.<sup>24</sup>

We might require a sort of material as well as inferential adequacy, by requiring each member of a certain specified set,  $\Gamma$ , of sentences to come out true under every candidate meaning.  $\Gamma$  might include sentences like 'the moon is not made of green cheese', 'it's not the case that robots steal luggage', and 'there exist electrons'—sentences about subject matters thought to be more substantive than philosophical ontology. This gets us nowhere: we can let our opinionated person (or chosen world,  $w$ ) agree with the sentences of  $\Gamma$ , but go loopy otherwise.<sup>25</sup>

Clearly there *are* multiple (inferentially and materially adequate) interpretations of quantifiers. As I see it, the real issue is 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. (Much more about joint-carving and the like below.) The core of quantifier variantism, in my view, is the rejection of the existence of such a metaphysically distinguished candidate meaning.

Some quantifier variantists will resist this talk of joint-carving (at least for logical expressions like quantifiers). They will be unwilling to *accept* (positive) claims about their candidate meanings carving nature at its joints. I will argue that their resistance is misguided. But in any event, even these quantifier variantists must *reject* the claim that some candidate meaning best carves nature at the joints—they must reject this claim by rejecting the relation of carving better at the joints. For the quantifier variantist's intuitive picture is that describing the world using one quantifier meaning is just as good as, gets at

<sup>23</sup> See also the discussion of pseudo-quantifiers in Williamson (2003, section VI).

<sup>24</sup> Intuitively, the candidate meanings just considered assign to names and predicates different meanings from their English ones. Might the quantifier variantist avoid triviality by insisting that their candidate meanings leave intact the meanings of expressions other than quantifiers? Quantifier variantists cannot accept this constraint on their candidate meanings. At any rate, they must concede that their candidate meanings alter the meanings of quantifier-free sentences. Suppose that mereological nihilism is not true in English. 'Ted is a person' is then true in English, but is presumably untrue under a 'nihilistic' candidate meaning that counts 'there are no persons' as true. This shift in meaning alters the truth conditions, and hence the meaning, of this quantifier-free sentence. See Sider (2007a) for more discussion.

<sup>25</sup> This won't generate multiple candidate meanings if  $\Gamma$  is so fully laden that it decides all questions of existence; but quantifier variantism would then become trivially false.

the facts just as well as, describing the world using another quantifier meaning. Admitting that there is a relation of carving better at the joints, and that one candidate is maximal with respect to this relation, would mean giving up on this picture. (This will become clearer once I say a bit more about carving at the joints.) So I continue to construe the core of quantifier variance as the rejection of a distinguished candidate quantifier meaning.

A further needed refinement is to distinguish the multiple candidate meanings that quantifier variantists accept from the multiple possibilities for contextual quantifier domain restriction. The quantifier variantist's candidate meanings must be in some sense *unrestricted*; they must be meanings appropriate to uses of quantifier expressions by people (like DKL and PVI) who have the concept of quantifier domain restriction and who insist that their uses are to be interpreted unrestrictedly.<sup>26</sup>

Summing up:

**Quantifier variance:** There is a class, *C*, containing many inferentially adequate candidate meanings, including two that we may call  $\text{existence}_{\text{PVI}}$  and  $\text{existence}_{\text{DKL}}$ . PVI's claims are true when 'exists' means  $\text{existence}_{\text{PVI}}$  and DKL's claims are true when 'exists' means  $\text{existence}_{\text{DKL}}$ . (Similarly, other views about composite material objects come out true under other members of *C*.) Further, no member of *C* carves the world at the joints better than the rest, and no other candidate meaning carves the world at the joints as well as any member of *C*—either because there is no such notion of carving at the joints that applies to candidate meanings, or because there is such a notion and *C* is maximal with respect to it.

What *are* these 'candidate meanings'? Great care must be taken here. The natural tendency is to think of the variety of candidate meanings as resulting from different choices of a *domain* for the quantifiers to range over. But this is a mistake. Suppose the quantifier variantist is speaking a language, call it PVIish, in which the quantifiers express  $\text{existence}_{\text{PVI}}$ . He cannot then say:

$\text{Existence}_{\text{DKL}}$  results from letting the quantifiers range over a larger domain, one that contains tables.

For saying this would presuppose that 'There exists a domain that contains tables' is true in the language he is speaking—PVIish. But this sentence logically entails 'there exists a table', which is false in PVIish. More generally, 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.

<sup>26</sup> For more on this, and more refinement of quantifier variance, see Sider (2007a).

The quantifier variantist might instead characterize the candidate meanings by ‘translation’.<sup>27</sup> For each existence<sub>*i*</sub> (existence<sub>DKL</sub>, existence<sub>PVI</sub>, ...), we can imagine a language, *L<sub>i</sub>*, in which ‘exists’ means existence<sub>*i*</sub>. The quantifier variantist might then provide a translation function  $\text{Tr}_i$ , that maps the sentences of *L<sub>i</sub>* to sentences of his own language (the language that he, the quantifier variantist, is speaking) that allegedly express the same propositions. He could then characterize existence<sub>*i*</sub> by saying in his own terms what sentences about it mean; he could, that is, say that an arbitrary sentence,  $\phi$ , of *L<sub>i</sub>* means the same as his sentence  $\text{Tr}_i(\phi)$ .

How might a PVIish-speaking quantifier variantist construct a translation function,  $\text{Tr}_{\text{DKL}}$ , for DKLish? The quantifier of DKLish is ‘more expansive’ than that of PVIish, so  $\text{Tr}_{\text{DKL}}$  cannot operate in the simplest way, namely by simply restricting DKLish’s quantifier. That is,  $\text{Tr}_{\text{DKL}}$  cannot use any rule of the following form:

$$\text{Restriction } \text{Tr}_{\text{DKL}}(\exists x\phi) = \exists x(\psi \ \& \ \phi)$$

(This is again the point that the candidate meanings cannot be viewed as domains.) Eli Hirsch (2002*b*) suggests that DKL’s ‘there exists a fusion of the *F* and the *G*’ might be translated by PVI as: ‘the *F* and the *G* each exist’. But this suggestion is incomplete, since it doesn’t provide a general recipe for translating DKL’s expression ‘there exists’. It tells us what to do with one particular form of sentence containing ‘there exists’, but it doesn’t tell us what to do with arbitrary sentences containing ‘there exists’. For instance, it doesn’t tell us what to do with ‘there exists an *F*’, or ‘there exist an *F* and a *G* standing in relation *R*’. To achieve greater generality, the quantifier variantist needs a generally applicable translation function.

One approach uses plural quantification.<sup>28</sup> Some examples:

$\text{Tr}_{\text{DKL}}(\text{There exists a table}) = \text{There exist some simples arranged tablewise}$

$\text{Tr}_{\text{DKL}}(\text{Some book rests on some table}) = \text{There exist some simples arranged tablewise, and there exist some simples arranged bookwise, and the second simples rest on the first simples.}$

<sup>27</sup> This is not the only approach. Quantifier variantists might, for example, refrain from saying anything at all about what candidate meanings *are*, and instead describe what they are supposed to *do*. Candidate meanings must be entities with respect to which quantificational sentences may be true or false, entities that can carve at the joints to varying degrees, and so on. See Sider (2007*a*).

<sup>28</sup> Pardon the liberties with use and mention. This approach is based on ideas from van Inwagen (1990), but van Inwagen is no deflationist; he uses these ‘translations’ to argue that his rejection of tables and chairs does not conflict with ordinary beliefs.

More generally, one would replace singular quantifiers over composites with plural quantifiers over simples, and replace each predicate,  $F$ , of composites with its irreducibly plural form  $pl(F)$  (e.g.,  $pl(\text{'is a table'})$  is 'are arranged tablewise';  $pl(\text{'x rests on y'})$  is 'the  $X$ s rest on the  $Y$ s').

How will this plural approach translate sentences of DKLish that are themselves plurally quantified? As Gabriel Uzquiano (2004) points out, 'pluplural' quantifiers over simples will be needed:<sup>29</sup>

$Tr_{DKL}(\text{There are some computers that communicate only with one another}) = \text{There are some simpleses, the } XX\text{s, such that each } Y\text{s that are one of the } XX\text{s are arranged computerwise, and if any such } Y\text{s communicates with any distinct } Z\text{s then the } Z\text{s are distinct from the } Y\text{s and are one of the } XX\text{s.}$

What about 'Most computers are fast,' 'Infinitely many computers are fast,' and so on? I suppose we could invent plural versions of these; alternatively, we could use pluplural quantification and introduce new predicates, as in:

$Tr_{DKL}(\text{Most computers are fast}) = \text{there are some } XX\text{s and some } YY\text{s such that some } Z\text{s are one of the } XX\text{s iff the } Z\text{s are arranged computerwise and are fast, and some } Z\text{s are one of the } YY\text{s iff the } Z\text{s are arranged computerwise and are not fast, and there are more of the } XX\text{s than the } YY\text{s}$

An alternate approach to translation would pick up on a suggestion by Cian Dorr (2005), and translate DKL's sentence  $\phi$  as PVI's 'If composition were unrestricted, then it would be the case that  $\phi$ '.<sup>30</sup>

These approaches to translation share a feature in common: they violate logical form. Unlike **Restriction**, each translates sentences whose major connective is the (singular) existential quantifier into sentences without that feature. For example, Hirsch translates DKL's existentially quantified sentence 'There exists something that is composed of the  $F$  and the  $G$ ' into PVI's conjunctive sentence 'the  $F$  exists and the  $G$  exists'. On the face of it, the second sentence leaves out the first sentence's claim that *a third thing exists*, in addition to the  $F$  and the  $G$ . As a result, the translations do not *look* like they are meaning-preserving; and the translations would emphatically be rejected as correct translations by both DKL and PVI. The deflationist nevertheless maintains that they are meaning-preserving. They are 'hostile' translations.

The deflationist must therefore concede a disanalogy between the PVI/DKL dispute and paradigmatic merely verbal disputes. A merely verbal dispute over whether geese live by the 'bank' can be resolved by a shift in vocabulary. One side will be happy for her word 'bank' to be translated as 'river bank', the

<sup>29</sup> See also Sides (1997); see Hazen (1997) on pluplural quantification.

<sup>30</sup> Dorr does not defend deflationism.

other for his word ‘bank’ to be translated as ‘financial bank’; and each will agree that geese live only by the river bank. These non-hostile translations are mutually acceptable to the disputants, and the dispute evaporates once they are introduced.

The fact that the deflationist’s translations are hostile certainly means that he cannot use them as an offensive weapon, to force PVI and DKL to concede that they do not genuinely disagree. But nor does this fact give the realist an offensive weapon against the deflationist. For it is no part of the deflationist’s position that warring ontologists be able to tell ‘from the inside’ that they are talking past one another. The deflationist thinks, rather, that there simply are no questions like those that the ontologists are trying to ask. They are *trying* to fix on a single distinguished quantifier meaning, but the attempt does not succeed. The translations assign the only sensible contents to the words of the misguided warring parties.

## 6 Other Ways to be Shallow

Of section 3’s four deflationary theses, I have focused on Equivocation, and argued that it rests on quantifier variance. Indeterminacy and Obviousness also rest on quantifier variance.<sup>31</sup>

An argument like that of section 4 shows that the candidate semantic values of which Indeterminacy speaks must result from variation in the interpretation of quantifiers. As for Obviousness, there is only one hope for it being obvious by linguistic/conceptual reflection that ‘There are tables’ is true: there must exist a multiplicity of equally good candidate meanings for what that sentence means, some rendering it true, others rendering it false. If the multiplicity exists then which candidate meaning is the *actual* meaning of the sentence would, plausibly, be determined by our *use* of the sentence, and hence the truth value of the sentence might be ascertainable by linguistic reflection (modulo knowledge of the existence of the multiplicity!—see section 12.) But if the multiplicity of equally good candidate meanings does *not* exist; if, for example, there is a single metaphysically privileged candidate meaning for the sentence; then that privileged candidate might be what we mean by the sentence, even if it does not perfectly fit how we use the sentence (see the discussion of reference magnetism below). In that case, linguistic/conceptual reflection on our use of

<sup>31</sup> So does a hybrid view according to which ‘There are tables’ is generally indeterminate among various candidates, but in context sometimes becomes more determinate to fit the way the speaker is talking.

‘There are tables’ would not be a reliable guide to its truth. So: Obviousness requires a multiplicity of equally good meanings for ‘There are tables.’ But then an argument like that of section 4 again shows that this multiplicity must result from a multiplicity of interpretations of the quantifiers.

This is certainly the way that the leading defender of Obviousness, Eli Hirsch, views the matter. Now, unlike defenders of Equivocation and Indeterminacy, Hirsch claims that ontological questions have determinate answers. Setting aside vagueness, English usage of sentences like ‘There are tables’ singles out a unique meaning for quantifiers from among the equally good candidate meanings, and hence fixes the truth values of ontological sentences. There is, therefore, a veneer of agreement between Hirsch and the contemporary practitioners of ontology. But Hirsch’s semantic/metaphysical picture leads to a very different methodology. For Hirsch, since conceptual analysis reveals which candidate meaning fits English usage, it conclusively settles ontological disputes. That’s *not* the approach of the current crowd of ontologists.

So: quantifier variance remains the crux. The central question of metaontology is that of whether there are many equally good quantifier meanings, or whether there is a single best quantifier meaning.<sup>32</sup> It is a question about nature’s joints; it is a question of *how much quantificational structure the world contains*.

To put my cards on the table: I think that there is indeed a single best quantifier meaning, a single inferentially adequate candidate meaning that (so far as the quantifiers are concerned) carves at the joints.<sup>33</sup> That is: I accept *ontological realism*.

But what’s all this about joint-carving and structure?

## 7 Structure

We ought to believe in an objective structure to reality.

Goodman (1972, 443–4) expressed his skepticism about objective structure by saying that similarity is sharing a property, any property. That makes any two things similar, since where one object is *F* and another is *G*, each has the property *being F or G*. Of course, we tend to focus on some dimensions

<sup>32</sup> Or whether some intermediate position is true: one might hold that there is a short list of best quantifier meanings. See McDaniel (this volume); Turner (MS).

<sup>33</sup> Actually I’m sympathetic to an alternate conception of ontological realism according to which what carves at the joints is a sort of proto-concept underlying quantification, predication, naming, and other ‘object-theoretic’ concepts. Here I formulate the view in terms of quantifiers; I hope to develop the alternate conception elsewhere.

of similarity and not others; but that's just a fact about us; there's nothing objectively special about those dimensions on which we focus.

It is true that our talk of similarity is pretty flexible: in the right context we are apt to count the sharing of nearly any property as a similarity. We might count people as similar based on their looks, the size of their bank accounts, or the voting districts in which they live. But it's hard to believe that that is all there is to it. For one thing, there is perfect intrinsic similarity—what Lewis (1986, 61) calls duplication. Duplication seems neither arbitrary nor context-dependent. It is objective, something to be discovered, out in the world rather than projected onto it by us.

Thoroughgoing Goodmanian skepticism about similarity is a breathtakingly radical metaphysical hypothesis, and is utterly unbelievable. Just try to believe that every grouping of objects is just as good, objectively speaking, as every other, that no objects 'go together' simply because of the nature of things. I predict you will fail. If all groupings are equally good, then the world is an amorphous collection of objects. Any linguistic community is free to choose any groupings they like for their predicates, describe their surroundings in those terms, and formulate laws of nature using those groupings. Provided they say true things in the resulting language, they succeed as inquirers just as well as any other linguistic community. We can describe the world of color using the familiar predicates, but we would lose nothing beyond convenience and familiarity by shifting to the language of 'grue' and 'bleen'.<sup>34</sup>

Surely that is wrong. The world has an objective structure; truth-seekers must discern that structure; they must carve at the joints; communities that choose the wrong groupings may get at the truth, but they nevertheless fail badly in their attempt to understand the world. If we must admit that, although the electrons go together because they're all electrons, the electron-or-building-or-dinner-jacket-or-dogs also go together because they're all electron-or-building-or-dinner-jacket-or-dogs, and that there's nothing objectively better about the first grouping than the second (beyond the fact that we happen to think in terms of it, or the fact that grouping things our way kept our primitive ancestors alive), then the world would, really, be just a structureless blob. There is more to be *discovered*, more that is mandatory for inquirers to think about. The world has objective streaks in it; it has structure.

Imagine that the world is a solid plenum, red on one half of a certain dividing plane, blue on the other. That's its structure. But of course, for *any*

<sup>34</sup>  $x$  is grue at time  $t$  iff: either  $x$  is green at  $t$  and  $t < t_0$ , or  $x$  is blue at  $t$  and  $t \geq t_0$ ;  $x$  is bleen at  $t$  iff: either  $x$  is blue at  $t$  and  $t < t_0$ , or  $x$  is green at  $t$  and  $t \geq t_0$  (where  $t_0$  is some selected time in the future). Note: these are not quite Goodman's (1955, Chapter III) definitions.

plane,  $P$ , there is the property of being on the one side of  $P$ , and the property of being on the other side of  $P$ ; and so there are *facts* involving these properties. But isn't there something special about the blue/red dividing plane, and the facts that involve this plane? These facts give the distinguished structure of the world. You can state truths if you don't speak in terms of this structure, but you miss out; you are deficient along one of the main axes of cognitive success.

Think of the structure of spacetime. Thought of as a bare set of points, spacetime has no structure at all: no topological structure, no affine structure, no metric structure. It is a mere blob.<sup>35</sup> This is a far cry from the picture one gets from a naive and natural reading of spacetime physics. On that reading, spacetime has a distinguished structure, which we discover empirically. Once we believed what Euclid told us about this structure; now we believe Einstein instead. *Pace* geometrical conventionalists like Reichenbach (1958, chapter 1), there is a factual question here: is spacetime *really* flat or curved? But what could the '*really*' amount to, other than something about distinguished structure? We can't just say 'spacetime is Euclidean if the spatiotemporal relations over the points of physical spacetime are Euclidean', because we would need to say which relations over points of spacetime are 'the spatiotemporal relations'. As any model theorist will point out, so long as there exist enough points one can always interpret geometric predicates over points so that the axioms of Euclidean geometry come out true, and one can also interpret them so that axioms appropriate to curved spacetime come out true. And as Reichenbach points out, one can give a 'coordinative definition' of spatiotemporal predicates (together with predicates of force) under which spacetime is flat and 'universal forces' systematically distort objects, or one can give an alternative coordinative definition according to which there are no universal forces and spacetime is curved. Neither definition is better than the other according to Reichenbach; it is thus a convention whether to speak of spacetime as curved or flat. To ask after the *real, objective, intrinsic* structure of spacetime, we must reject Reichenbach's coordinative definitions and the interpretations of the model theorist, and consult only those interpretations of geometric predicates that assign them relations that carve spacetime at the joints. It is these relations that are 'the spatiotemporal relations', and the pattern in which they hold determines the structure of spacetime.

There are various ways one might try to make sense of this talk of structure. But what's important is that we really must make sense of it *somehow*. A certain core realism is, as much as anything, the shared dogma of analytic philosophers, and rightly so. The world is out there, waiting to be discovered,

<sup>35</sup> Not even that: blobs have a distinguished topology.

it's not constituted by us—all that good stuff. Everyone agrees that this realist picture prohibits truth from being generally mind-dependent in the crudest counterfactual sense, but surely it requires more. After all, the grue things would all have turned bleen at the appointed hour even if humans had never existed; under one of Reichenbach's coordinative definitions one can truly say that 'spacetime would still have been Euclidean even if humans had never existed'. The realist picture requires the 'ready-made world' that Goodman (1978) ridiculed; there must be structure that is mandatory for inquirers to discover. To be wholly egalitarian about all carvings of the world would give away far too much to those who view inquiry as the investigation of our own minds.

To solidify this notion of structure, let me say a bit more about its broader significance. We may begin with David Lewis's ideas (1983; 1984; 1986, 59–69). Lewis thinks of the structure of the world as given by the distribution of what he calls 'natural' properties and relations. He thinks of natural properties and relations as similarity-determiners: perfectly similar objects, for example, are those objects over whose parts the natural properties and relations are isomorphically distributed. He also thinks of the natural properties and relations as content-determiners. Imagine an ideal interpreter trying to determine what my words mean. What information would she consult in order to decide? In part, the interpreter would look at how I *use* the words. Think of this as determining a set of sentences,  $\Gamma$ , such that the interpreter ought, other things being equal, to interpret my words so that the members of  $\Gamma$  come out true. Perhaps the sentences in  $\Gamma$  are those that are analytic for me; perhaps they are just a certain subset of the sentences I believe. Either way, as Hilary Putnam's (1978, part IV; 1980; 1981, chapter 2) model-theoretic argument and Saul Kripke's (1982) Wittgenstein show us, the constraint that my words must be interpreted so that the sentences in  $\Gamma$  come out true is not strong enough; the interpreter needs more information. Take any intuitively false sentence  $F$  that is consistent with  $\Gamma$ ; if there are enough objects then there will be an interpretation that makes all the sentences of  $\Gamma$  plus  $F$  as well true. This is a *mis*interpretation of my words, but if the ideal interpreter has only the facts of use to go on, nothing will tell her this. So, what else beyond my use of words must the interpreter consult? Lewis's answer is: the facts of naturalness. Other things being equal, the ideal interpreter must assign natural properties and relations to my predicates. Natural properties and relations are 'reference magnets'. The ideal interpreter should project my observed usage of language to new cases by interpreting me as 'going on in the same way'; naturalness is a way to cash out the idea of 'going on in the same way'; it supplies Wittgenstein's (1958, §218) 'rails invisibly laid to infinity'.

Lewis and others also connect naturalness to nomic and causal notions. On one view, for instance, the natural properties and relations are those that play a role in the laws of nature. (For Lewis, this connection is partly constitutive of the notion of a law of nature.<sup>36</sup>)

Lewis's conception of objective structure is important, but I want to highlight other connections. First, structure has an evaluative component. The goal of inquiry is not merely to believe many true propositions and few false ones. It is to discern the structure of the world. An ideal inquirer must think of the world in terms of its distinguished structure; she must carve the world at its joints in her thinking and language. Employers of worse languages are worse inquirers. Imagine divvying up the world in terms of grue and bleen, or electron-or-building-or-dinner-jacket-or-dogs.

Second, acknowledging the notion of distinguished structure lets us make sense of claims that this or that feature is merely 'projected' onto the world, rather than being 'really there'. Many want to say that aesthetic features are projections of our standards of evaluation, rather than being 'really out there'. This should not be taken to require mind-dependence of aesthetic qualities, in the sense that the mountain would not be beautiful if no one ever saw it. It should rather be taken to deny that there is any distinguished aesthetic structure. A language omitting aesthetic predicates would not thereby be worse, in the sense described in the previous section (though of course it might be worse in other respects). A society employing aesthetic predicates with very different meanings from our own would not thereby carve the world at its joints less well than we do.<sup>37</sup>

Third, this notion of structure is central to metaphysics. The central task of metaphysics is illuminating the fundamental structure of reality. Are laws of nature fundamental, inherent to reality's structure? Are dispositions fundamental? Is modality? Tense? Morality? To be sure, metaphysics is also concerned with the question of how to fit laws, dispositions, and the rest into a given conception of what is regarded as fundamental, but the most basic question is that of what is fundamental.<sup>38</sup>

Fourth, this notion of structure is central to the sciences. As we saw, physics seeks to discern the structure of spacetime. When Minkowski denies that there is any 'distinguished' relation of simultaneity, he is denying that simultaneity structure is part of spacetime's distinguished structure. There are of course (many) ways to foliate Minkowski spacetime, but none is *distinguished*; none carves spacetime at the joints.

<sup>36</sup> Lewis (1994). <sup>37</sup> See McDaniel (MSa) for a detailed defense of this sort of view.

<sup>38</sup> Compare Fine (2001).

The choice of the right concepts is crucial to the beginning of a science; it is just as important as the discoveries that come later, which are phrased in terms of those concepts. If the initial choice misses reality's joints, subsequent progress in terms of the ill-chosen concepts is unlikely. Frege's (1879) focus on the now-familiar quantifiers, and Chomsky's focus on native speakers' nonprescriptive judgments of grammaticality, were conceptual choices that led to progress where before there had been stagnation.

Finally, amidst all these 'applications', let's not miss something right at the surface. The very idea of distinguished structure itself, once grasped, is one that must surely be acknowledged.

## 8 Regimentation of Talk of Structure

Granted that we should take talk of structure seriously, how should such talk be regimented? I will discuss several ways. But let me not raise false hopes: by 'regiment' I mean canonically formulate; I do not mean *reduce*. Each proposal I will consider makes use of an unexplained notion of structure. Indeed, I doubt that any reductive account is possible.<sup>39</sup>

First there is Lewis's method, which is to speak of the naturalness of properties and relations. This method presupposes the existence of properties and relations, and its fundamental locution is a *predicate* over these properties and relations: 'is natural'. (A variant method would employ a two-place predicate of relative naturalness.) Lewis's properties and relations are 'abundant' in the sense that there is a property for each class of possible individuals and a relation for each class of possible  $n$ -tuples, so only a few properties and relations count as natural. The predicate for naturalness, for Lewis, is undefined; it is at the very foundation of his metaphysical system.

A closely related approach does away with the abundant properties and relations, and posits a property or relation only when its instantiation contributes to the world's distinguished structure. The most familiar view of this sort is D. M. Armstrong's (1978a; 1978b), according to which these properties and relations are universals in the traditional sense.

Lewis's and Armstrong's ways of speaking of structure presuppose the existence of properties and relations. But there are nominalistic ways to speak of structure. A simple way, though not fully satisfying, would be to introduce a distinction, call it 'betterness', as applied to entire (interpreted)

<sup>39</sup> Fine (2001) argues persuasively for the need to recognize an unreduced notion of (something like what I am calling) structure.

languages: languages are better or worse depending on how closely they cleave to the structure of the world. A language with primitive predicates for electron-or-building-or-dinner-jacket-or-dogs would be worse, other things being equal. A Lewisian could define betterness in terms of the naturalness of the properties and relations expressed by the language's primitive predicates, but a nominalist could instead take 'better' as an undefined predicate.

Another route that avoids reifying meanings appeals to a more complex locution of comparative naturalness. Consider:

To be an electron is more natural than to be an electron or a quark.

Rather than regarding the phrases 'to be an electron' and 'to be an electron or quark' as denoting entities (properties), and regarding 'is more natural than' as a two-place predicate, a nominalist could regard 'is more natural than' here as an operator. In English it would be a word that turns a pair of infinitive phrases into a sentence. In a formal regimented language, the core locution of naturalness could be regarded as a two-place sentence operator,  $N(\phi, \psi)$ , where  $\phi$  and  $\psi$  may have free variables, both first and higher-order. Think of  $N$  *informally* as follows. When a sentence  $\phi$  has free variables, think of its meaning as its contribution to determining the proposition expressed by  $\phi$  relative to a given choice of values for its free variables. This contribution will come from its nonvariable constituents—its constant expressions, whether logical or nonlogical—plus its grammar. Thus, think of the meaning of ' $x$  is tall' as the contribution that 'is tall' makes to propositions (the property of *being tall*, perhaps); think of the meaning of 'Ted is  $F$ ', where  $F$  is a predicate variable, as the contribution 'Ted' makes to propositions (Ted, on some views); think of the meaning of ' $P \ \& \ Q$ ', where  $P$  and  $Q$  are sentence variables, as the meaning of '&' (a function from pairs of propositions to propositions, perhaps). And finally, think of  $N(\phi, \psi)$  as saying that  $\phi$ 's meaning is more natural than  $\psi$ 's. All that was informal. Officially,  $N$  is a primitive sentence operator. ( $N$  is in a way like a quantifier: while  $\phi$  and  $\psi$  may have free variables, those variables should not be thought of as free in  $N(\phi, \psi)$ ;  $N$  in effect binds them.) Thus, to regiment 'to be an electron is more natural than to be an electron or a quark', we write: ' $N(x$  is an electron,  $x$  is an electron or  $x$  is a quark)'.<sup>40</sup>

<sup>40</sup> Another nominalist-friendly proposal, inspired by Fine's (2001) 'it is true in reality that': introduce a primitive one-place sentence operator,  $F$ , to be read 'it is part of reality's distinguished structure that'. (I prefer  $N$  to  $F$  because  $N$  locates naturalness/structure at the subsentential/subfactual level. Intuitively, if the fact that there exists an electron is part of reality's structure, then that is because of the nature of existence and electronhood. Note, though, that this choice of where to locate structure has consequences: it disallows a view that Chalmers (this volume) floats: that some but only some quantificational facts are part of reality's structure.) For that matter, the main claims of this paper

## 9 Logical Structure

We should extend the idea of structure beyond predicates, to expressions of other grammatical categories, including logical expressions like quantifiers. (Interpreted) logical expressions can be evaluated for how well they mirror the logical structure of the world. Just as with a predicate, one can ask of a logical expression whether it carves the world at the joints.

Why might one accept the notion of structure, but resist its application to quantifiers and other logical expressions? I can think of a few reasons. First, one might think: ‘I admit talk of structure only when it is discoverable by science.’ But structure is never ‘discoverable by science’ in any direct way. Rather, we have defeasible reason to think that the predicates of successful theories match the structure of the world. But this generalizes beyond predicates, to logical vocabulary. Our logical notions have been developed and refined for centuries, and are indispensable both in folk theories and scientific ones. That gives us reason to think that they carve at the joints. They are wildly successful theoretical posits (more on this later).

Second, one might be in the grips of logical conventionalism. Here is a picture:

Logical expressions do not concern features of the world. They are rather vehicles we use to conventionally render sentences of certain forms true, conditional on sentences of other forms being true. In the limiting case, certain sentences—the logical truths—get their truth by convention alone. Logical expressions are not *contentful*; their semantic contribution is *purely formal*, and is therefore radically unlike the semantic contributions made by predicates and other words, which concern *the world*.

This picture is exceedingly vague, so vague that it is hard to see exactly what the consequences of accepting it would be. Nevertheless, I suspect that something like it is partly responsible for mistrust of applying the notion of structure to logic. I therefore think that it is at least psychologically useful to remember that logical conventionalism was refuted by Quine (1936) long ago.<sup>41</sup>

Third, one might argue that certain criteria or tests for carving at the joints do not apply to the logical expressions. As we saw, Lewis thinks of his

could be formulated using Fine’s own framework, which appeals to primitive notions of *truth in reality* and *grounding* (and perhaps also in Dorr’s framework of ‘metaphysical analysis’ (2004; 2005) or Melia’s framework of nominalistic truthmaking (2005)). Lewis (1983, 347–348) mentions another nominalist approach, but it presupposes modal realism and does not generalize to quantifiers. I hope to discuss all this further in a forthcoming book.

<sup>41</sup> See also Sider (MS).

natural properties as being properties whose sharing makes for similarity. But, one might think, this criterion does not smoothly apply to logical words. And insofar as it does apply, it yields uninteresting verdicts. For example, it might be thought that the similarity test counts the meaning of the existential quantifier as *unnatural*, since even very dissimilar things share *existence* in common.

This argument misapplies the similarity criterion. Perhaps it shows that the *predicate* ‘exists’ does not carve at the joints. But the question is whether the *quantifiers* carve at the joints. To answer, we should look to similarity between *facts*, not similarity between particulars. When each of the following sentences is true:

Ted is sitting

John is sitting

we have similarity between the facts: between the fact that Ted is sitting and the fact that John is sitting. Now, in this case there happens to be a further similarity: a similarity between the particulars Ted and John. But not in other cases:

Ted is human

Ted is located in North America

Here there is but one particular, and so we have no similarity between (distinct) particulars; but (if the category of particulars carves at the joints, anyway!) we do have similarity between the facts expressed by these sentences, in virtue of the recurrence of the particular Ted in each fact. And finally, now, consider:

Something is human

Something is located in North America

If the existential quantifier carves at the joints, we again have fact-similarity. There is some genuine commonality between cases in which something is human and cases in which something is located in North America. Each is a case of *something* being a certain way, and that is a genuine similarity.<sup>42</sup> A quantifier variantist, on the other hand, would say that the recurrence of the word ‘something’ in our sentences for describing these facts marks no particular similarity between them, just as the applicability of the word ‘grue’ to multiple things marks no particular similarity.<sup>43</sup>

<sup>42</sup> Compare: if conjunction and disjunction carve at the joints, then all conjunctive facts share a genuine similarity that they do not share with any disjunctive fact. Thanks to Ryan Wasserman.

<sup>43</sup> I have spoken of similarity between *facts*, but the similarity judgments in question don’t really require reifying facts. As Jason Turner pointed out, one might express such judgments thus: ‘when

And if the similarity criterion did fail us, we could always leave it behind. When speaking of expressions other than predicates, we could lean instead on the other facets of the notion of distinguished structure, since those other facets generalize smoothly beyond the case of predicates.<sup>44</sup> We may speak of language users as ‘going on in the same way’ when they apply old words in new situations, of meanings as being mandatory, of speakers getting at reality as it really is, and of discovering rather than projecting, even if the words in question are not predicates.

Fourth, one might worry that, unlike predicates, quantifiers do not mean or stand for entities; hence, there are no quantifier meanings to compare for naturalness. The premise of this argument is questionable; Montague (1973) (following Frege) treats quantifier meanings as properties of properties. But even granting the premise, the conclusion does not follow. Even if quantifier meanings are not entities, we may speak of the naturalness of quantifiers in some nominalistic way (see sections 8 and 10).

Fifth, one might worry that if quantifiers have natural meanings then every object must be a natural object, contrary to the otherwise attractive view in first-order ontology that every collection of objects, however scattered, composes some further object. But ontological realism is in fact compatible with scattered objects. Consider the fusion of the coins in our pockets plus the Eiffel tower. This scattered object is indeed ‘unnatural’ in the sense that it has no very natural properties. But that does not imply that quantifiers have unnatural meanings, or fail to carve at the joints. Intuitively speaking, what is unnatural about this object is its *nature*, not its *being*.

Finally, logical structure seems necessary to avoid semantic indeterminacy for logical expressions. Recall Kripkenstein’s semantic skeptic, who doubts that anything about my use of the word ‘plus’ insures that it means *plus* rather than *quus*. Lewis (1984) answers him by saying: nothing about my use of ‘plus’ insures this. What insures it is that plus is a more natural meaning than quus. But now imagine that the skeptic turns his attention to the logical constants, and asks: what about my use of ‘everything’ insures that it means universal quantification, rather than something that acts like universal quantification for sentences I have uttered in the past, but behaves bizarrely in new sentences? It won’t do to say that this meaning violates the inferential role I stipulate that ‘everything’ is to obey. For my stipulation will take the form of a universally quantified sentence, ‘for any sentences  $S_1, \dots$ , if  $\phi(S_1 \dots)$  is true then  $\psi(S_1 \dots)$

something is human, it’s like when something is located in North America’; the ‘it’ here is like the ‘it’ in ‘It is raining’.

<sup>44</sup> See also Sider (2004, 682).

is also true', which may be rendered true by a 'bent' interpretation of the quantifier 'any'. Further, as we saw in section 5, it is easy to construct inferentially adequate candidate meanings which match our prior usage of quantified sentences, but which go haywire for new sentences.

What rules out rampant semantic indeterminacy for quantifiers is just what rules out such indeterminacy for predicates: reality's structure. Other things being equal, joint-carving interpretations of quantifiers are better interpretations. And note that quantifier variantists have as much need for structure here as do ontological realists, if their ontological deflationism is to be restricted to 'philosophical' questions of existence. For they will then want to say that a 'nonphilosophical' quantified sentence—'there exists a god', say, or 'there exists a quark'—has a determinate truth value even if prior usage of quantifiers is consistent with both a set of candidate meanings that render it true and a set of candidate meanings that render it false. Excluding the candidate meanings that fail to carve at the joints, they will say, cuts out all of the members of one of these sets, and thereby secures a determinate truth value for the sentence. The remaining set will still contain many members; these agree on the truth value of the determinate sentence but differ over the truth values of 'philosophical' quantified sentences.

## 10 Quantificational Structure

Ontological realism is the claim that the world's distinguished structure includes quantificational structure. How exactly should we understand this claim?

If we are willing to treat quantifier-meanings as entities, then we can follow Lewis's strategy for regimenting talk of structure, and say that the absolutely unrestricted<sup>45</sup> quantifier has a natural meaning. (Think now of quantifier meanings less holistically than we did in section 5.) Suppose for example that the meaning of a (monadic, singular) quantifier is a property of properties. The meaning of 'all' is the property had by  $P$  iff everything has  $P$ ; the meaning of 'some' is the property had by  $P$  iff something has  $P$ ; and so on. The claim that quantifier meanings are natural then amounts to the claim that, whereas each of the following is natural:

*being a property  $P$  such that everything has  $P$*

*being a property  $P$  such that something has  $P$  ("existence")*

<sup>45</sup> Some argue that absolutely unrestricted quantification over the entire set-theoretic hierarchy leads to paradox. (See the papers in Rayo and Uzquiano (2007).) If this view is correct, the ontological realist could say instead that any quantifier that is wholly unrestricted in its application to individuals (nonsets) has a more natural meaning than any of the translations of section 5.

none of the following is natural:<sup>46</sup>

*being a property  $P$  such that the opinionated person believes that something has  $P$*

*being a property  $P$  such that there are some  $X$ s that instantiate  $pl(P)$  ('plural existence<sub>DKL</sub>')*

*being a property  $P$  such that if composition were unrestricted, then something would have  $P$  ('counterfactual existence<sub>DKL</sub>')*

(Here the 'pl' functor has been extended beyond predicates, to free variables ranging over properties.) Moreover, there is only a single natural meaning in the vicinity of **existence** (and there is only a single natural meaning in the vicinity of *being a  $P$  such that everything has  $P$* ). 'Vicinity of' means: fits our use of quantifier expressions, in particular, their core inferential role.

Suppose instead that we are reluctant to reify quantifier meanings. We must then turn to the nominalistic options for regimenting talk of structure.

The first nominalistic option was to employ a predicate 'better', as applied to entire languages. In this case, we could formulate ontological realism as the claim that there is a class of best languages; and in any two members of this class, the quantifiers have the same semantic function.

The second nominalistic option was to employ the sentence operator  $N$ . Recall its informal gloss: think of the meanings of open sentences  $\phi$  and  $\psi$  as the semantic contributions of their nonvariable components, and think of  $\lceil N(\phi, \psi) \rceil$  as meaning that  $\phi$ 's meaning is more natural than  $\psi$ 's. Now consider the open sentence ' $\exists xFx$ ', where ' $F$ ' and ' $x$ ' are both variables. The only nonvariable component is ' $\exists$ '—thus we may think informally of the meaning of ' $\exists xFx$ ' as the meaning of the existential quantifier. Claims of the form ' $N(\exists xFx, \psi)$ ' therefore may be thought of as saying that the meaning of the existential quantifier is more natural than that of  $\psi$ . So we may express some of the upshots of the doctrine that quantifiers carve at the joints thus:

$N(\exists xFx, \text{Composition is unrestricted}) \square \rightarrow \exists xFx$

'For there to exist an  $F$  is more natural than for there to have existed an  $F$  if composition had been unrestricted'

<sup>46</sup> The complexity of the English locutions needed to express these meanings is not the source of their unnaturalness; whether a meaning is natural or not is an intrinsic feature of that meaning. One could introduce a language whose primitive quantifiers expressed one of these unnatural meanings; compare a language in which 'grue' and 'bleen', rather than 'blue' and 'green', are semantically primitive. English expressions for these unnatural meanings must be complex because English quantifiers, I say, express natural meanings.

$N(\exists xFx, \exists Xs \text{ pl}(F)(Xs))$

‘For there to exist an  $F$  is more natural than for there to exist some things that are  $\text{pl}(F)$ ’<sup>47</sup>

(‘ $\text{pl}$ ’ has morphed again; it has started to attach itself to predicate variables! If this makes no sense, then so much the worse for the pluralization paraphrase strategy, since it does not apply to higher-order sentences.) In fact, we can say something more general, in effect that unrestricted quantification is the *unique* natural meaning in its vicinity:

**N-naturalness of  $\exists$ :** For any  $\phi$  in our language that fits (well enough) our use of ‘ $\exists xFx$ ’, either  $\phi$  is synonymous with ‘ $\exists xFx$ ’ or the following is true:  $\lceil N(\exists xFx, \phi) \rceil$ .

One way or another, we can regiment the claim that quantifiers carve at the joints. But it’s important not to get too fixated on regimentation here, just as it’s important not to get too fixated on regimenting claims about structure generally. The core claim is that quantificational structure is part of the distinguished, objective structure of the world. One can understand and accept this claim while being agnostic about its precise regimentation.

## II Reply to the Deflationist

Suppose that ontological realism is true. (Let us continue to postpone the question of why one might believe this.) Just as ‘electron’ carves the world at the joints, the quantifiers also carve the world at the joints. In that case, the answers to questions of ontology are ‘objective’, ‘substantive’, and ‘out there’, just like the answers to questions about the nature of electrons. If quantificational structure is part of the objective structure of the world, then ontological deflationism is wrong in all its forms.

First let’s consider the thesis of Equivocation (section 3), according to which PVI and DKL each makes true ontological claims given what he means by ‘there exists’. Now, both PVI and DKL are willing to put in the following performance:

Here in the philosophy room, by ‘there exists’ I mean absolutely unrestricted existence! [Pound, stamp.] My words are not to be deviously reinterpreted. When I ask whether

<sup>47</sup> To say this is not to say that singular existential quantification is more natural than plural existential quantification; that claim (about which I am here neutral) would be regimented thus:  $N(\exists xFx, \exists XsG(Xs))$ , where  $F$  is a singular predicate variable and  $G$  is a plural predicate variable. The unnaturalness in the plural paraphrases comes from ‘ $\text{pl}$ ’, not plural quantification.

there exist tables, I am speaking precisely and carefully and non-loosely. Contrast my current austere intentions for ‘there exists’ with my rough and ready quantification in everyday speech, such as when I say ‘there are many ways to win this chess match’, ‘Jones and I have nothing in common,’ and so on. I regard those uses as loose talk; not so for my current usage. Perhaps in ordinary speech the sentence ‘there are tables’ is in some sense equivalent to ‘there exist simples arranged tablewise’, or ‘if composition had been unrestricted then there would have existed a table’, but not under my current usage.

After they make this performance, what do their uses of ‘there exists’ mean? First assume that quantifier meanings are entities, and that the Lewisian story about content-determination is correct. There are a number of candidate meanings that fit the English inferential role of ‘there exists’: **existence**, counterfactual existence<sub>DKL</sub>, plural existence<sub>DKL</sub>, and so on. The defender of the deflationary thesis of Equivocation will say that, because of their differing uses of ‘there exists’, DKL means one of the existence<sub>DKL</sub>s and PVI means something else. But consider the candidacy of **existence**. It is of an appropriate logical category to be meant by ‘there exists’, and it fits the core inferential role of PVI and DKL’s use of ‘there exists’. Moreover, it fits their use of ‘there exists’ perfectly when applied to simples. Now, **existence** cannot exactly fit the use of ‘there exists’ by both PVI and DKL (if their ‘use’ includes their beliefs about disputed sentences in ontology). Suppose, for the sake of argument, that **existence** fits PVI’s use of ‘there exists’ perfectly, and therefore fails to fit DKL’s use. Does this mean that DKL does not mean **existence** by ‘there exists’, and rather means plural existence<sub>DKL</sub> (say) instead? Surely not; surely **existence**’s superior naturalness outweighs its failure to fit DKL’s use of ‘existence’ perfectly—especially given the performance DKL made to clarify his use of ‘there exists’. Similar remarks apply if **existence** fits DKL’s use rather than PVI’s, or if it fits neither. Thus, both PVI and DKL mean **existence** by ‘there exists’, and the dispute is not merely verbal; the thesis of Equivocation is false.

Similar arguments can be given against the deflationary theses of Obviousness and Indeterminacy. Indeterminacy says that ‘there exists’ in English is semantically indeterminate over various candidates; but if **existence** is a reference magnet then ‘there exists’ determinately means **existence** (compare the semantic determinacy of predicates of fundamental physics). Obviousness says that ‘there exists’ means whatever candidate meaning fits our ordinary usage of ‘there exists’, and that we should therefore approach ontology by doing conceptual analysis; but if **existence** is what we mean by ‘there exists’ because of its reference magnetism, not because of its fit with ordinary use of ‘there exists’, then conceptual analysis needn’t be a guide to the truth values of English statements of existence (compare the irrelevance of conceptual analysis to inquiry into matters of fundamental physics).

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’ (by DKL, or PVI, or a typical speaker of English). Put less metaphorically, they make an assumption about the true theory of content determination: that this theory weights naturalness heavily enough to overcome any mismatch there may be between **existence** and the use of ‘there exists’. Whether this assumption is correct depends on the strength of the magnetic force (i.e., the relative weights of naturalness and use in the true theory of content), and also on the degree to which the sentences whose use **existence** does not match are meaning-constitutive.<sup>48</sup> But in fact, it does not matter whether this assumption is correct. To see this, suppose for the sake of argument that the magnetic force is weak, too weak to compensate for any significant mismatch with use.

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’. And a defender of Indeterminacy might justly claim that ‘there exists’ in English is indeterminate over many candidates. And a defender of Obviousness might justly claim that ‘there exists’ in English determinately means a certain candidate meaning whose nature is best revealed by conceptual analysis. None of these concessions undermines the spirit of ontological realism.

Let us explore the final possibility (involving Obviousness) in a little more detail. Suppose English use of ‘there exists’ fits a certain candidate meaning ‘existence<sub>EH</sub>’ (for Eli Hirsch), which we may describe as follows. Let ‘OO’ be a statement of the principles of ‘ordinary ontology’, certain tacit principles that allegedly govern our existential talk. OO bans the existence of scattered objects and objects with bizarre persistence conditions (like Hirsch’s (1982, 32) incars and outcars), while allowing cars, people, planets, and so on. Existence<sub>EH</sub> may then be defined thus:

There exists<sub>EH</sub> a  $\phi$  iff: (OO  $\square \rightarrow$  there exists a  $\phi$ )

The defender of Obviousness now argues as follows. Since the force of reference magnetism is weak, and English usage of ‘there exists’ fits existence<sub>EH</sub>, ‘there

<sup>48</sup> If only PVI and DKL were in the picture, it is very doubtful that the sentences would be meaning-constitutive since neither treats his beliefs about what exists as anything other than that: *beliefs*. They do not treat sentences like ‘there exist tables’ as being meaning-constitutive in the way that ‘bachelors are unmarried’ is; and meaning-constitutive sentences are a far more important component of use than are mere expressions of beliefs. I myself suspect that the same is true of ordinary speakers. When confronted with ‘there exist no tables, only simples arranged tablewise’, ordinary speakers become confused. When they have matters explained to them, and really understand what is going on, perhaps some would reject such sentences as linguistically aberrant, but many I suspect would not; they would express either agnosticism, belief, or disbelief. See Sider (2004).

exists' in English means existence<sub>EH</sub>. Since PVI and DKL are speaking English, they each use 'there exists' with this meaning, and so there is an answer to the question that they are debating. But their debate is misguided. DKL and PVI's quasi-scientific search for a simple theory of what exists, which makes no appeal to ordinary linguistic intuitions about 'there exists', is perhaps appropriate to discern the correct theory of **existence**, but not to discern the correct theory of the meaning of 'there exists' in English—i.e., existence (no boldface). For each accepts all the candidate meanings in question: existence<sub>EH</sub>, existence<sub>DKL</sub>, **existence**, etc. By hypothesis, the naturalness of **existence** is not enough to trump a bad fit with use. So each can agree (if they agree with the hypothesis, anyway), that the truth about existence is given by the candidate that best matches ordinary English usage of 'there exists'. So each should forsake neoQuinean scholastic mumbo-jumbo and start doing conceptual analysis. In this case, Obviousness would be true.

Thus, if **existence** is insufficiently magnetic to trump a poor fit with use, Equivocation, Obviousness, or Indeterminacy might well be true *about the English quantifier 'there exists'*. But in that case, PVI and DKL can simply recast their dispute directly in terms of **existence**. They can introduce a *new* language in which to conduct their debate, using the following performance:

Let's *give* the speakers of ordinary English 'there exists'; let us henceforth conduct our debate using '∃'. We hereby stipulate that '∃' is to express an austere relative of the ordinary English notion of existence. We hereby stipulate that although the meaning of '∃' is to obey the core inferential role of English quantifiers, ordinary, casual use of disputed sentences involving 'there exists' (such as 'Tables exist') are not to affect at all what we mean by '∃'. We hereby stipulate that if there is a highly natural meaning that satisfies these constraints, then that is what we mean by '∃'. Perhaps the resulting '∃' has no synonym in English. Fine—we hereby dub our new language *Ontologese*.<sup>49</sup>

In this new language, Equivocation, Obviousness, and Indeterminacy will all be false.

Early on in philosophy we are taught not to abandon ordinary language locutions on the battlefield. Otherwise, the debate evaporates. Is freedom compatible with determinism? If 'free' means 'undetermined by the laws and past' then there is nothing worth debating; 'freedom' thus understood is obviously incompatible with determinism. If 'free' means 'not in chains' then again we have nothing worth debating; 'freedom' thus understood is obviously compatible with determinism. So what can we mean by 'free' in order for there to be a debate worth having? We can mean *freedom!*—freedom in the ordinary sense. Once we stop meaning that, 'freedom' is not worth debating.

<sup>49</sup> Cf. Dorr's (2005) discussion of the 'language of ontology'.

Abandoning ordinary language is indeed often a bad idea, but when it is, that is because there is no *other* way to anchor the debate, no other way to explain the term under dispute without trivializing the debate. In the present case, **existence** gives us another anchor. While it is not worth debating whether ‘determinism is compatible with freedom’ under stipulative definitions of ‘free’, it *is* worth debating whether ‘there exist tables’ when ‘there exist’ is stipulated to mean **existence**. In fact, if ‘there exists’ in English does not express **existence**, then a debate over **existence** is much *more* worth having than a debate over existence. The goal of inquiry is to discern the distinguished structure of the world, and we would do that more directly by investigating **existence** than by investigating existence.

The move to Ontologese was designed for the eventuality of a weak force of reference magnetism. If Lewis’s doctrine of reference magnetism were false, that would be a sort of limiting case of weak reference magnetism. Thus, opponents of reference magnetism (who are friendly to **existence**) can simply regard ontologists as speaking Ontologese (so long as they can tell a non-Lewisian story about how stipulations like those I used to introduce Ontologese can succeed.)

My response to the deflationist has assumed that there are such entities as quantifier meanings. How can this all be recast in more nominalistic terms?

Where  $\phi$  is an open sentence of our language and  $\sigma$  is an open sentence used by some person  $S$  (who perhaps speaks another language), say that  $\phi$  fits  $S$ ’s use of  $\sigma$  iff enough of  $S$ ’s meaning-constitutive uses of  $\sigma$  come out true when  $\sigma$  is assigned  $\phi$ ’s meaning (more nominalistically: ‘... when  $\sigma$  is presumed synonymous with  $\phi$ ’).<sup>50</sup> Note that  $\phi$  need not vindicate *all* of  $S$ ’s meaning-constitutive uses of  $\sigma$ , in order to fit  $S$ ’s use of  $\sigma$ ; it must merely vindicate ‘enough’ of them. Then, using the operator  $N$  from section 8, we can formulate the following (limited) nominalistic version of Lewis’s doctrine of reference magnetism:

**N-magnetism:** for any open sentences  $\phi$  and  $\psi$  (of our language), for any person  $S$ , and for any open sentence  $\sigma$  of  $S$ ’s language, if  $\phi$  fits  $S$ ’s use of  $\sigma$  and if  $N(\phi, \psi)$ , then  $\psi$  is not synonymous with  $\sigma$

(Note the application of the notion of synonymy to sentences that have free variables, and which are drawn from different languages.) Intuitively: if  $\phi$  is as described (more natural than  $\psi$  and fits  $S$ ’s use of  $\sigma$  well enough), then  $\phi$  is a better candidate than  $\psi$  to be meant by  $\sigma$ , in which case it can’t be that  $\sigma$

<sup>50</sup> I am simplifying by treating fit with use and relative naturalness as all-or-nothing. A more accurate theory would weigh the severity of departures from use against degrees of naturalness-difference.

means  $\psi$  rather than  $\phi$ . Now, consider a defender of Equivocation who claims that PVI and DKL mean different things by their quantifiers. In particular, suppose that the deflationist says that DKL means counterfactual existence<sub>DKL</sub> by ‘there exists’—that is, DKL’s open sentence ‘ $\exists xFx$ ’ is synonymous with PVI’s open sentence ‘Composition is unrestricted  $\square \rightarrow \exists xFx$ ’. Here is how PVI could use (N-magnetism), and the principle of (N-naturalness of  $\exists$ ) described above, to rebut this deflationist:

Suppose for reductio that the deflationist is right: DKL’s sentence ‘ $\exists xFx$ ’ is synonymous with my sentence ‘Composition is unrestricted  $\square \rightarrow \exists xFx$ ’. Then, given these two premises:

- i) my sentence ‘ $\exists xFx$ ’ fits DKL’s use of his sentence ‘ $\exists xFx$ ’ (DKL and I agree on the core inferential role of ‘ $\exists$ ’, after all)
- ii)  $N(\exists xFx, \text{Composition is unrestricted } \square \rightarrow \exists xFx)$

we get a violation of (N-magnetism)—contradiction.

Further, *if* the deflationist is right that DKL and I mean different things by ‘ $\exists xFx$ ’, then *no* sentence of my language is synonymous with DKL’s ‘ $\exists xFx$ ’. For suppose otherwise—suppose that for some open sentence  $\phi$  in my language:

- a)  $\phi$  is synonymous with DKL’s ‘ $\exists xFx$ ’
- b)  $\phi$  is *not* synonymous with my sentence ‘ $\exists xFx$ ’

Since DKL and I agree on the core inferential role of ‘ $\exists$ ’,  $\phi$  fits my use of ‘ $\exists xFx$ ’. So, by b) and (N-naturalness of  $\exists$ ),  $N(\exists xFx, \phi)$ . But then given i) from the previous paragraph and (N-magnetism),  $\phi$  is not synonymous with DKL’s ‘ $\exists xFx$ ’, contradicting a).

DKL could make parallel arguments. He could argue, for example, that if PVI’s ‘ $\exists xFx$ ’ is not synonymous with his (DKL’s) ‘ $\exists xFx$ ’, then it is not synonymous with *anything* in his (DKL’s) language.

Thus, PVI and DKL can rebut particular claims of synonymy made by the defender of Equivocation, and can make a more general argument that if the deflationist is right that they are talking past each other, then neither of their languages contains the means to express *both* what PVI means and also what DKL means by ‘ $\exists xFx$ ’. This is not quite a full rebuttal of the deflationist since the deflationist might claim that each language’s quantifier is unstateable in the other language. But this is an unstable position, since the deflationist has no principled reason to deny either PVI or DKL the ability to introduce a synonym in his own language for the other’s quantifier.<sup>51</sup>

<sup>51</sup> The situation here is a little complex. Arguably, quantifier variantists ought to deny that a single language can contain distinct nonequivalent symbols obeying the usual introduction and elimination rules for quantifiers plus a common stock of predicates and names (see Sider (2007a)). But this does

As for the move to Ontologese: that move was designed to answer the worry that the force of reference magnetism is too weak to draw the English word ‘there exists’ to **existence**. A nominalistic version of this worry may be put as follows:<sup>52</sup>

In addition to containing ‘ $\exists$ ’, could English contain some expression that is i) not synonymous with ‘ $\exists$ ’, ii) fits our use of ‘ $\exists$ ’, and iii) carves at the joints at least as well as ‘ $\exists$ ’? Not if the force of reference magnetism is strong, for in that case ‘ $\exists$ ’ would have meant the same as this other expression all along. But this scenario *is* allowable if the magnetic force is weak. In N-theoretic notation: English might contain some open sentence  $\phi$  such that i)  $\phi$  is not synonymous with ‘ $\exists xFx$ ’, ii)  $\phi$  fits our use of ‘ $\exists xFx$ ’, and iii) it’s not the case that:  $N(\exists xFx, \phi)$ . But then, (N-naturalness of  $\exists$ ) would be false. So: if the magnetic force is weak, we cannot assume that (N-naturalness of  $\exists$ ) is true.

To answer the worry, we must introduce a new language, Ontologese, in which (N-naturalness of  $\exists$ ) is guaranteed to be true, even if the magnetic force is weak. The way I introduced this language above was to stipulate that ‘ $\exists$ ’ is to stand for a natural meaning, but the N-theorist cannot put the stipulation this way, since she refuses to quantify over meanings as entities. She must instead say the following:

Any person obeying the following instructions will succeed in speaking a language (‘Ontologese’) in which ‘ $\exists$ ’ is meaningful and univocal, and in which (N-naturalness of  $\exists$ ) is true:

**Instructions for introducing Ontologese:** i) introduce a symbol, ‘ $\exists$ ’, with the grammar of the familiar existential quantifier; ii) stipulate that no philosophically contentious sentences count toward your use of ‘ $\exists$ ’—only its core inferential role counts; iii) have the concept of a restriction on a quantifier and explicitly disavow all such restrictions; iv) intend by using ‘ $\exists$ ’ to speak as fundamentally as possible; explain what this means by contrasting your austere intentions for ‘ $\exists$ ’ with your rough and ready everyday use of English quantificational language such as ‘there are many ways to win this chess match’, ‘Jones and I have nothing in common,’ and so on.

One might analogously recast the rebuttals of Obviousness and Equivocation in terms of the  $N(\phi, \psi)$  operator.

Finally, consider the nominalistic strategy for regimentation in which we speak of better and worse languages. The rebuttal of the deflationist proceeds as

not on its own bar PVI from expressing DKL’s quantifier; at most it prevents him doing so via a symbol obeying the quantificational inference rules. Further, PVI might introduce a primitive symbol for DKL’s quantifier provided he also introduces new names and predicates for the new quantifier. Or might the quantifier variantist argue that the application of the N operator to pairs of open sentences containing both quantifiers is problematic?

<sup>52</sup> Note that in this paragraph, and in the statements of (N-naturalness of  $\exists$ ) and (N-magnetism), English is thought of as containing ‘ $\exists$ ’.

follows. If the force of reference magnetism is strong, then English is a language in which ‘there exists’ is univocal (when used unrestrictedly), and, moreover, is a better language than—carves nature at its joints better than—any otherwise similar language in which expressions fitting the core inferential role of ‘there exists’ behave differently than they do in English (for example, languages in which ‘there exists’ is synonymous with the English ‘if composition were unrestricted then there would exist’). If, on the other hand, the magnetic force is weak (or if the use of ‘there exists’ by English speakers is particularly rigid and so favors an inferior language), then one can introduce a much better language than English by following the instructions for introducing Ontologese given above.

## 12 What Should We Believe?

I have given a model of how ontological disputes could be genuine. If quantifiers carve at the joints then ontology is as ‘factual’ and ‘deep’ as can be. But is the model correct? Do quantifiers really carve at the joints? What should we believe about metaontology?

Some are initially so disposed to take ontological disputes seriously that they regard deflationism as a nonstarter. As a frontal assault on these natural born metaphysicians, the deflationist’s case is weak. The deflationist’s hostile suggestions for what ontologists mean by ‘there exists’ fail badly by ordinary standards of sameness of meaning. The deflationist might yet be right—the ontologists’ equivocation needn’t be transparent to them—but is unlikely to convince.

Others are firmly in the deflationist camp, and are unrelentingly opposed to all realism about structure, let alone realism about quantificational structure. (Most extremely, there are the verificationists.) My thesis that reality’s fundamental structure includes quantificational structure will not impress these hard-liners.

But many (I include myself) are somewhere in the middle. We are comfortable with neither verificationism nor a naive trust of metaphysics. What should we think?

I think we should remember something that often gets lost in these debates. *Everyone* faces the question of what is ‘real’ and what is the mere projection of our conceptual apparatus, of which issues are substantive and which are ‘mere bookkeeping’. This is true within science as well as philosophy: one must decide when competing scientific theories are mere notational variants. Does a metric-system physics genuinely disagree with a system phrased in terms of

feet and pounds? We all think not.<sup>53</sup> Was Reichenbach wrong?—is there a genuine question of whether spacetime is flat or curved? We mostly think yes. Are there genuine differences between the traditional, Hamiltonian, and Lagrangian formulations of classical mechanics?—a harder question!<sup>54</sup> These are questions of structure: how much structure is there in the world? Unless one is prepared to take the verificationist's easy way out, and say that 'theories are the same when empirically equivalent', one must face difficult questions about where to draw the line between objective structure and conceptual projection.

The ontological realist draws the line in a certain place: part of the world's distinguished structure is its quantificational structure. Those who regard ontological realism as 'overly metaphysical' should remember that they too must draw a line.

And in fact, the ontological realist can give a pretty convincing argument for his choice of where to draw the line. Quine's (1948) criterion for ontological commitment is good as far as it goes: believe in those entities that your best theory says exists. But in trying to decide how much structure there is in the world, I can think of no better strategy than this extension of Quine's criterion: believe in as much structure as your best theory of the world posits. The structure posited by a theory corresponds to its primitive notions—its 'ideology' in Quine's (1951) terminology—which includes its logical notions as well as its predicates.

This criterion is as vague as Quine's. It gives us no mechanical procedure for deciding when two theories differ genuinely; it will not on its own tell us whether Reichenbach was right. But notice this: every serious theory of the world that anyone has ever considered employs a quantificational apparatus, from physics to mathematics to the social sciences to folk theories. Quantification is as indispensable as it gets. This is defeasible reason to think that we're onto something, that quantificational structure is part of the objective structure of the world, just as the success of spacetime physics gives us reason to believe in objective spacetime structure.<sup>55</sup> Questions framed in indispensable

<sup>53</sup> Not that an affirmative answer is absolutely incoherent. It is absurd (though *why* it is absurd is a good question), but not incoherent, to claim that the metric system carves nature at the joints better than rival systems. In Lewisian terms, for example, one could claim that the relation *being separated by one meter* is natural, whereas *being separated by one foot* is not.

<sup>54</sup> See North (MS).

<sup>55</sup> Further, it gives us reason to believe in *unitary* quantificational structure. Just as the success of particle physics suggests that 'electron' has a *single* natural meaning (structure here is unitary, rather than being fragmented as with 'jade'), the indispensability of quantification suggests that each quantifier has a single natural meaning. (Not that quantifiers being 'jade'-like would reinstate deflationism. If the existential quantifier had, say, exactly two natural meanings, then hitherto univocal ontological questions would be replaced by pairs of questions, each as substantive and hard to answer as the original.)

vocabulary are substantive; quantifiers are indispensable; ontology is framed using quantifiers; so ontology is substantive.

If you remain unconvinced and skeptical of ontology, what are your options?

First, you could reject the notion of objective structure altogether. I regard that as unthinkable.

Second, you could reject the idea of structure as applied to logic. I regard that as unmotivated.

Third, and more plausibly, you could accept the idea of structure as applied to logic, but deny that there is distinguished *quantificational* structure in particular. This is in effect quantifier variance, but there are some interesting subcases.

For example, you might reject the need, and perhaps even the possibility, of a sufficiently expressive language in which all of the expressions carve perfectly at the joints—a *fundamental language*, I will say. There are many languages one can speak that carve at the joints equally well; but no language both carves perfectly and enables one to describe all the facts. There is no way for God to write the book of the world without slumming it; there can be no Russellian (1985, 58) logically perfect language. This, I suspect, is Hirsch's picture. (It gives one a feeling of vertigo; one wants to ask: what is the world *really* like?)

Alternatively, you might try to develop a quantifier-free fundamental language. But what would such a language look like? The 'stuff' gambit is tempting: perhaps the language that best limns the world will mention stuff, not things.<sup>56</sup> The challenge will be to develop a stuff language that is sufficiently expressive, but which doesn't reintroduce the structure you are trying to avoid. How could such a language be sufficiently expressive without the means to say that there is *some* stuff of such and such a type, and that *this* stuff is *part* of *that* stuff? But if you admit these locutions into your fundamental language, substantive questions about the ontology of composite stuff will reappear.

Yet another alternative would be to claim that in the fundamental language, all quantification is restricted. But this threatens to reintroduce the questions of ontology. For instance, we could ask: 'is there any context in which it would be true to say "there are tables and chairs"?' It is hard to see how you could block the legitimacy of this question; and if it is phrasable in your fundamental language, it is substantive and nonverbal.<sup>57</sup>

A final alternative would be to admit quantification in your fundamental language, but to claim that the logicians have mischaracterized that notion

<sup>56</sup> A related suggestion would be that all quantification in a fundamental language will be mass quantification: 'some water', 'all gold', and so on.

<sup>57</sup> And there are powerful objections to the denial of unrestricted quantification; see Williamson (2003).

in some way or other. You might, for instance, claim that the fundamental quantificational notions combine tense and quantification—‘there were’, ‘there will be’—and do not reduce to untensed quantifiers and tense operators.<sup>58</sup> This has little impact on the debate over mereology, but it does make it hard to raise questions about temporal ontology—another goal of the usual ontological deflationist.<sup>59</sup> Or you might claim that the fundamental quantificational notion is a British amalgam of quantification and predication: ‘there is an *F* such that ...’, where *F* must be replaced by a sortal predicate, rather than the bare quantifier of predicate logic.<sup>60</sup> But that would not make all the ontological questions go away. First, we could ask what the range of sortals is; we might ask: is there any sortal *F* such that ‘there is an *F* that is composed of me and the Eiffel tower’ is true? Second, the question: ‘granted that there exist subatomic particles that are arranged personwise, do there exist people in addition?’ is phrasable in this language, since ‘person’ and ‘subatomic particle’ are surely sortals. If this British-quantificational language is fundamental, these questions have non-verbal answers, and neither a ‘no’ nor a ‘yes’ answer could be refuted on purely conceptual grounds.

There are, then, various alternatives to ontological realism, various alternative views about reality’s quantificational structure. And my argument for ontological realism—that the track record of standard predicate logic makes its ideology the best bet—is by no means conclusive. But if you remain tempted by one of the alternatives, think about one final thing. Is your rejection of ontological realism based on the desire to make unanswerable questions go away, to avoid questions that resist direct empirical methods but are nevertheless not answerable by conceptual analysis? If so, none of these proposals will give you what you desire. None of them lets you bypass debate over the ultimate structure of the world. Far from it: each is simply an alternate proposal about what that structure is like. Given each proposal there remain substantive metaphysical questions, namely those that can be raised in what the proposal grants to be fundamental terms. Furthermore, the very assertion that the proposed variety of structure, as opposed to the quantificational structure that I support, is part of reality’s objective structure seems itself to be incapable of being established by either straightforward empirical means or conceptual analysis. In fact, even a ‘negative’ thesis such as quantifier variance itself is a claim about the extent of the world’s structure, and as such is as epistemologically problematic as any thesis in first-order metaphysics. Quantifier variance is ‘just more metaphysics’.

<sup>58</sup> Here I am indebted to Jackson (MS).

<sup>59</sup> See Sider (2006).

<sup>60</sup> Thomasson (2008) is sympathetic to (a less metaphysical version of) this, but her deflationism is not based solely on sortal-relativity.

The point of metaphysics is to discern the fundamental structure of the world. That requires choosing fundamental notions with which to describe the world. No one can avoid this choice. Other things being equal, it's *good* to choose a set of fundamental notions that make previously intractable questions evaporate. There's no denying that this is a point in favor of ontological deflationism. But no one other than a positivist can make *all* the hard questions evaporate. If nothing else, the choice of what notions are fundamental remains. There's no detour around the entirety of fundamental metaphysics.

## References

- Armstrong, David M. (1978a). *Nominalism and Realism*, volume 1 of *Universals and Scientific Realism*. Cambridge: Cambridge University Press.
- (1978b). *A Theory of Universals*, volume 2 of *Universals and Scientific Realism*. Cambridge: Cambridge University Press.
- Baxter, Donald (1988a). 'Identity in the Loose and Popular Sense.' *Mind* 97:575–582.
- (1988b). 'Many-One Identity.' *Philosophical Papers* 17:193–216.
- Bennett, Karen (2009). 'Composition, Colocation, and Metaontology.' In Chalmers et al. (2009) (this volume).
- Carnap, Rudolf (1950). 'Empiricism, Semantics and Ontology.' *Revue Internationale de Philosophie* 4:20–40. Reprinted in *Meaning and Necessity: A Study in Semantics and Modal Logic*. 2nd edn. Chicago:University of Chicago Press, 1956.
- Chalmers, David (2009). 'Ontological Indeterminacy.' In Chalmers et al. (2009) (this volume).
- , David Manley and Ryan Wasserman (eds) (2009) (this volume). *Metametaphysics*. Oxford: Oxford University Press.
- Dorr, Cian (2002). *The Simplicity of Everything*. Ph.D. thesis, Princeton University.
- (2004). 'Non-Symmetric Relations.' In Dean W. Zimmerman (ed.), *Oxford Studies in Metaphysics*, volume 1, 155–192. Oxford: Oxford University Press.
- (2005). 'What We Disagree About When We Disagree About Ontology.' In Mark Kalderon (ed.), *Fictionalism in Metaphysics*, 234–286. Oxford: Oxford University Press.
- Eklund, Matti (2006a). 'Metaontology.' *Philosophy Compass* 1:317–334.
- (2006b). 'Neo-Fregean Ontology.' *Philosophical Perspectives* 20: 95–121.
- (2007). 'The Picture of Reality as an Amorphous Lump.' In Sider et al. (2007), 382–396.
- (2008). 'Putnam on Ontology.' In Maria Uxia Rivas Monroy, Concepcion Martinez Vidal and Celeste Cancela (eds), *Following Putnam's Train: On Realism and Other Issues* 203–22. Amsterdam: Rodopi.
- (2009). 'Carnap and Ontological Pluralism.' In Chalmers, et al. (2009) (this volume).

- (MS). 'Maximalist Ontology.'
- Fine, Kit (2001). 'The Question of Realism.' *Philosopher's Imprint* 1:1–30.
- Frege, Gottlob (1879). *Begriffsschrift, ein der arithmetischen nachgebildete Formelsprache des reinen Denkens*. Halle/Saale: Verlag L. Nebert. Translated as *Concept Script, a formal language of pure thought modelled upon that of arithmetic*, by S. Bauer-Mengelberg in J. vanHeijenoort (ed.), *From Frege to Gödel: A Source Book in Mathematical Logic, 1879–1931*, 1–82. Cambridge, MA: Harvard University Press, 1967.
- Goodman, Nelson (1955). *Fact, Fiction, and Forecast*. Cambridge, MA: Harvard University Press.
- (1972). *Problems and Projects*. Indianapolis: Bobbs-Merrill.
- (1978). *Ways of Worldmaking*. Indianapolis: Hackett.
- Hawthorne, John (2006). 'Plenitude, Convention, and Ontology.' In *Metaphysical Essays*, 53–70. Oxford: Oxford University Press.
- Hazen, Allen (1997). 'Relations in Lewis's Framework without Atoms.' *Analysis* 57:243–248.
- Hirsch, Eli (1982). *The Concept of Identity*. Oxford: Oxford University Press.
- (2002a). 'Against Revisionary Ontology.' *Philosophical Topics* 30:103–127.
- (2002b). 'Quantifier Variance and Realism.' *Philosophical Issues* 12:51–73.
- (2005). 'Physical-Object Ontology, Verbal Disputes, and Common Sense.' *Philosophy and Phenomenological Research* 70:67–97.
- (2007). 'Ontological Arguments: Interpretive Charity and Quantifier Variance.' In Sider et al. (2007), 367–381.
- Jackson, Alex (MS). 'Time and Logic.'
- Kripke, Saul (1982). *Wittgenstein on Rules and Private Language*. Cambridge, MA: Harvard University Press.
- Lewis, David (1983). 'New Work for a Theory of Universals.' *Australasian Journal of Philosophy* 61: 343–377. Reprinted in Lewis (1999): 8–55.
- (1984). 'Putnam's Paradox.' *Australasian Journal of Philosophy* 62:221–236. Reprinted in Lewis (1999): 56–77.
- (1986). *On the Plurality of Worlds*. Oxford: Basil Blackwell.
- (1994). 'Humean Supervenience Debugged.' *Mind* 103:473–490. Reprinted in Lewis (1999): 224–247.
- (1999). *Papers in Metaphysics and Epistemology*. Cambridge: Cambridge University Press.
- McDaniel, Kris (MSa). 'Moral Nominalism.'
- (2009). 'Ways of Being.' In Chalmers, et al. (2009) (this volume).
- McGrath, Matthew (2005). 'No Objects, No Problem?' *Australasian Journal of Philosophy* 83:457–486.
- Melia, Joseph (2005). 'Truthmaking Without Truthmakers.' In Helen Beebe and Julian Dodd (eds), *Truthmakers: The Contemporary Debate*, 67–84. Oxford: Clarendon Press.

- Montague, Richard (1973). 'The Proper Treatment of Quantification in Ordinary English.' In Jaakko Hintikka, J. M. E. Moravcsik and Patrick Suppes (eds), *Approaches to Natural Language*, 221–242. Dordrecht/Boston: Reidel. Reprinted in Montague (1974): 247–270.
- (1974). *Formal Philosophy: Selected Papers of Richard Montague*. Ed. Richmond H. Thomason. New Haven: Yale University Press.
- North, Jill (MS). 'The "Structure" of Physics: A Case Study.'
- Oliver, Alex (1996). 'The Metaphysics of Properties.' *Mind* 105: 1–80.
- Peacocke, Christopher (1988). 'The Limits of Intelligibility: A Post-Verificationist Proposal.' *Philosophical Review* 97: 463–496.
- Putnam, Hilary (1975). 'The Refutation of Conventionalism.' In *Mind, Language and Reality: Philosophical Papers*, volume 2, 153–191. Cambridge: Cambridge University Press.
- (1978). *Meaning and the Moral Sciences*. Boston: Routledge and Kegan Paul.
- (1980). 'Models and Reality.' *Journal of Symbolic Logic* 45:464–482. Reprinted in Putnam (1983): 1–25.
- (1981). *Reason, Truth and History*. Cambridge: Cambridge University Press.
- (1983). *Realism and Reason: Philosophical Papers*, volume 3. Cambridge: Cambridge University Press.
- (1987). *The Many Faces of Realism*. La Salle, IL: Open Court.
- Quine, W. V. O. (1936). 'Truth by Convention.' In O. H. Lee (ed.), *Philosophical Essays for A. N. Whitehead*, 90–124. New York: Longmans. Reprinted in Quine (1966): 70–99.
- (1948). 'On What There Is.' *Review of Metaphysics* 2: 21–38. Reprinted in Quine (1953): 1–19.
- (1951). 'Ontology and Ideology.' *Philosophical Studies* 2: 11–15.
- (1953). *From a Logical Point of View*. Cambridge, MA: Harvard University Press.
- (1966). *The Ways of Paradox*. New York: Random House.
- (1976). 'Whither Physical Objects.' In R. S. Cohen, P. K. Feyerabend and M. W. Wartofsky (eds), *Essays in Memory of Imre Lakatos*, 497–504. Dordrecht: D. Reidel Publishing Company.
- Rayo, Agustín and Gabriel Uzquiano (eds.) (2007). *Absolute Generality*. Oxford: Oxford University Press.
- Reichenbach, Hans (1958). *The Philosophy of Space and Time*. New York: Dover.
- Russell, Bertrand (1985). *The Philosophy of Logical Atomism*. Ed. David F. Pears. La Salle, IL: Open Court, 1985.
- Sidelle, Alan (2002). 'Is There a True Metaphysics of Material Objects?' *Philosophical Issues* 12: 118–145.
- Sider, Theodore (2001a). 'Criteria of Personal Identity and the Limits of Conceptual Analysis.' *Philosophical Perspectives* 15: 189–209.
- (2001b). *Four-Dimensionalism*. Oxford: Clarendon.
- (2003). 'Against Vague Existence.' *Philosophical Studies* 114: 135–146.

- (2004). ‘Précis of *Four-Dimensionalism*, and Replies to Critics.’ *Philosophy and Phenomenological Research* 68:642–647, 674–687.
- (2006). ‘Quantifiers and Temporal Ontology.’ *Mind* 115: 75–97.
- (2007a). ‘Neo-Fregeanism and Quantifier Variance.’ *Aristotelian Society Supplementary Volume* 81: 201–232.
- (2007b). ‘Parthood.’ *Philosophical Review* 116: 51–91.
- (MS). ‘Reducing Modality.’
- Sider, Theodore, John Hawthorne and Dean W. Zimmerman (eds) (2007). *Contemporary Debates in Metaphysics*. Oxford: Blackwell.
- Sides, C. Brock (1997). ‘Mereological Nihilism and the Limits of Paraphrase.’ Available online at <<http://evans-experientialism.freewebspace.com/mereology.htm>>.
- Sosa, Ernest (1999). ‘Existential Relativity.’ In Peter French and Howard K. Wettstein (eds), *Midwest Studies in Philosophy XXIII: New Directions in Philosophy*, 132–143. Oxford: Basil Blackwell.
- Thomasson, Amie L. (2007). *Ordinary Objects*. New York: Oxford University Press.
- (2009). ‘Answerable and Unanswerable Questions.’ In Chalmers et al. (2009) (this volume).
- Turner, Jason (MS). ‘Ontological Pluralism.’
- Uzquiano, Gabriel (2004). ‘Plurals and Simples.’ *The Monist* 87: 429–451.
- van Inwagen, Peter (1987). ‘When Are Objects Parts?’ In James Tomberlin (ed.), *Philosophical Perspectives 1: Metaphysics*, 21–47. Atascadero, CA: Ridgeview.
- (1990). *Material Beings*. Ithaca, NY: Cornell University Press.
- (1994). ‘Composition as Identity.’ *Philosophical Perspectives* 8:207–220. Reprinted in van Inwagen (2001): 95–110.
- (2001). *Ontology, Identity and Modality*. Cambridge: Cambridge University Press.
- Wiggins, David (1980). *Sameness and Substance*. Cambridge, MA: Harvard University Press.
- Williamson, Timothy (2003). ‘Everything.’ *Philosophical Perspectives* 17: 415–465.
- Wittgenstein, Ludwig (1958). *Philosophical Investigations*. 3rd edition. Oxford: Basil Blackwell & Mott. Translated by G. E. M. Anscombe.
- Yi, Byeong-uk (1999). ‘Is Mereology Ontologically Innocent?’ *Philosophical Studies* 93: 141–160.