

Copyright  
by  
Bryan William Pickel  
2010

The Dissertation Committee for Bryan William Pickel  
certifies that this is the approved version of the following dissertation:

## **Reduction, Ontology and the Limits of Convention**

Committee:

---

Mark Sainsbury, Supervisor

---

Daniel Bonevac

---

Josh Dever

---

Herbert Hochberg

---

Robert Koons

---

Fraser MacBride

**Reduction, Ontology and the Limits of Convention**

by

**Bryan William Pickel, B.S.; B.A.**

**DISSERTATION**

Presented to the Faculty of the Graduate School of  
The University of Texas at Austin  
in Partial Fulfillment  
of the Requirements  
for the Degree of

**DOCTOR OF PHILOSOPHY**

THE UNIVERSITY OF TEXAS AT AUSTIN

December 2010

[T]he unpacking by literal speech, within the limits of the humanly possible, of all metaphors, anthropomorphic, spatial, or otherwise, is nowhere more urgent, just as it is nowhere more difficult, than in ontology. – Gustav Bergmann<sup>1</sup>

---

<sup>1</sup>Bergmann (1992), pp. 44-45.

## Acknowledgments

I owe an enormous debt to Josh Dever and Mark Sainsbury. They reviewed countless drafts and have advised me throughout graduate school. More importantly, they challenged my views and forced me to rethink fundamental issues. These challenges forced me to develop the ideas which eventually became this dissertation.

I received valuable feedback from Daniel Bonevac, Ray Buchanan, Robert Koons, Fraser MacBride, Adam Pautz and Ian Proops. Jody Azzouni and David Sosa also provided useful advice. Edwin Allaire and Herbert Hochberg helped me develop my conception of ontology at an early stage. Throughout the writing process, I have benefited from discussions with other graduate students including: Derek Ball, Nora Berenstain, Chad Charmichael, Jeremy Evans, David Frank, Enrico Grube, Julie Hunter, John Keller, Daniel Korman, Jon Litland, Nick Mantegani, Aidan McGlynn, Brian Miller, Timothy Pickavance, Michael Raven, Alex Skiles, Malte Willer and Briggs Wright. Portions of the dissertation were presented at a University of Texas graduate colloquium, and I thank the audience.

I am grateful to my parents, Bill and Kathy Pickel, who worked hard for my education, and to my sister, Jenna. Finally, I thank my wife, Sarah,

whose love and support provided the foundation I needed to complete this project.

BRYAN PICKEL

The University of Texas at Austin  
May 2010

# Reduction, Ontology and the Limits of Convention

Publication No. \_\_\_\_\_

Bryan William Pickel, Ph.D.  
The University of Texas at Austin, 2010

Supervisor: Mark Sainsbury

It is widely agreed that *ontological reduction* is possible, that the ontology of one theory can be shown to be nothing over and above the ontology of a distinct theory. However, it is also widely agreed that one assesses a theory's ontology by determining what it says there is. I show that there is a tension between these orthodox positions. To resolve this tension, I propose and defend the view that the ontological commitments of a statement are sensitive to the theory in which it is embedded.



2.3.1.1	Being and Being an Entity . . . . .	65
2.4	The Semantic Argument . . . . .	68
2.4.1	What the Semantic Argument Is Not . . . . .	71
2.4.2	The Interesting Reading . . . . .	73
2.4.2.1	On (S2) . . . . .	73
2.4.3	On (S1) . . . . .	77
2.4.4	The Constraints on Reduction in Ontology . . . . .	85
2.5	Conclusion . . . . .	87
<b>Chapter 3. Carnap’s Ontological Conventionalism</b>		<b>89</b>
3.1	Internal and the External Questions . . . . .	91
3.2	The Theoretical Conception of Ontology . . . . .	98
3.2.1	Using Theories to Resolve Ontological Disputes . . . . .	100
3.3	Carnap’s Argument . . . . .	103
3.3.1	The Triviality of Internal Questions . . . . .	104
3.4	Tolerance and Ontological Underdetermination . . . . .	108
3.4.1	Carnap’s Argument for Tolerance . . . . .	111
3.4.2	Tolerance without the Dogmas . . . . .	117
3.5	Tolerance and Other Natural Languages . . . . .	118
3.5.1	The Same Theory Response . . . . .	121
3.5.2	A Comparison with the views of Eli Hirsch . . . . .	122
3.6	Conclusion . . . . .	125
<b>Chapter 4. Against Ideal Language Ontology</b>		<b>127</b>
4.1	The Ideal Language Method in Russell . . . . .	130
4.2	Ontology and Incomplete Symbols . . . . .	133
4.2.1	Incomplete Symbols and Logical Fictions . . . . .	136
4.2.2	The Structure of the Facts . . . . .	138
4.3	The Ontological Sense of ‘There Is’ . . . . .	141
4.4	Reality, Entity, Existence . . . . .	147
4.5	Primitivism . . . . .	152
4.5.1	Existence, Real Existence and Ontology . . . . .	156
4.5.2	Structure and Ideal Languages . . . . .	162

4.6	The Reason to Paraphrase: The Extent of Reality . . . . .	164
4.7	Conclusion . . . . .	169
<b>Chapter 5. On Saying Enough</b>		<b>173</b>
5.1	Ontology and Inquiry . . . . .	176
5.2	Tolerance . . . . .	180
5.3	Are the Theories True? . . . . .	182
5.4	Are the Theories Adequate? . . . . .	185
5.5	Can Adequate Theories Leave Out Truths? . . . . .	187
5.6	Adequacy as Ontology . . . . .	196
5.7	Conclusion . . . . .	202
<b>Bibliography</b>		<b>203</b>
<b>Vita</b>		<b>217</b>

# Chapter 1

## A Puzzle about Reduction

Projects going under the label ‘reductionism’ are a dime a dozen in philosophy. Those engaged in these projects have attempted to show, among other things, that certain laws are entailed by underlying laws or that entities in one class stand in certain explanatory relations to entities in another class, or that the classes of entities are identical.<sup>1</sup> The projects are unified in that they attempt to fully articulate and defend the thesis that one phenomenon is *nothing over and above* some underlying phenomenon.

I will address projects aiming specifically at *ontological reduction*. A philosopher aims at ontological reduction when she seeks to reconcile the restrictive ontology of her preferred theory with the truth of some target sentences which seem to carry additional commitments. The ontological reductionist wants to show that these sentences are not *ontologically inflating* once one accepts the underlying theory.<sup>2</sup> That is, she wishes to show that the ontological commitments introduced by these sentences do not exceed the re-

---

<sup>1</sup>There is a voluminous literature on various notions or accounts of reductionism. One classic statement of reductionism is Nagel (1961), Chapter 11. Many issues are discussed in Bonevac (1982), Causey (1988), Fodor (1999) and McLaughlin (2008b,a).

<sup>2</sup>The connection between ontology and reductionism is discussed in Hempel (2001).

strictive ontology of her preferred theory.

I do not suppose that all of those who are engaged in generic reductionist projects are interested in effecting ontological reductions. However, I believe that a perennial goal of many who are engaged in these seemingly disparate reductionist projects has been to show that the apparent ontology of a theory can be fit into a more parsimonious ontology. As a result of my focus on ontological reduction, I am not concerned with issues such as whether the laws governing one phenomenon are entailed by the laws governing some underlying phenomenon. Construed in this way, even philosophers who consider themselves to be “non-reductionists” count as ontological reductionists, since many want to show that one phenomenon is nothing over and above another.<sup>3</sup> Indeed, there is a natural connection between any thesis stating that one phenomenon is nothing over and above another phenomenon and ontological reduction.<sup>4</sup>

I will argue that these projects face a little appreciated threat issuing from an almost universally accepted thesis about ontology: Quine’s criterion

---

<sup>3</sup>Cynthia MacDonald (1995) says of her non-reductionism (p. 140), “Psychophysical supervenience is thus thought to be capable of showing that although mental properties are strictly speaking nonphysical, the ontology of the physical world in some sense both determines and exhausts what there is to the mental domain.” Bonevac (1995) also counts as an ontological reductionist in my sense, though endorsing a seeming form of non-reductive materialism.

<sup>4</sup>The connection between the expression “nothing over and above” and “ontological innocence” is discussed in Bennett and McLaughlin (2005). Kim (2000) (p. 97) complains about Nagelian conceptions of reduction that they give “us no ontological simplification” and thereby fail “to give meaning to the intuitive ‘nothing over and above’ that we rightly associate with reduction.

of ontological commitment.

**Quine’s Criterion of Ontological Commitment** A theory has Fs in its ontology if and only if it includes or entails a sentence that says that there are Fs.<sup>5</sup>

According to Quine, accepting entities of a certain sort into one’s ontology – including them in one’s inventory of the world – just amounts to saying that there are such things. This thesis is so pervasive that it is often taken as trivial and obvious.<sup>6</sup>

In this chapter, I will argue that Quine’s criterion undermines almost all known proposals for effecting ontological reductions, including those which invoke analyticity, syntactic correspondence, supervenience, token identities and type identities. Even if one grants that certain supervenience or identity claims are true, one cannot show that the ontology of the target sentences is contained in the ontology of one’s underlying theory. Indeed, one can demonstrate the opposite: that the ontological commitments of the target sentences exceed the ontology of the underlying theory. To show this, I will build on the work of others who have examined the anti-reductionist implications of

---

<sup>5</sup>“We can very easily involve ourselves in ontological commitments by saying, for example, that there is something (bound variable) which red houses and sunsets have in common; or that there is something which is a prime number larger than a million. But this is, essentially, the only way we can involve ourselves in ontological commitments: by our use of bound variables.” Quine (1999b), p. 12. “When I inquire into the ontological commitments of a given doctrine or body of theory, I am merely asking what, according to that theory, there is.” Quine (1976b), pp. 203-4.

<sup>6</sup>Burgess and Rosen (1997); Burgess (2008b).

Quine's criterion.<sup>7</sup>

## 1.1 Quine's Criterion of Ontological Commitment

I am attempting to show that Quine's criterion of ontological commitment undermines projects in ontological reduction. In this section, I will outline some constraints on ontological debates imposed by the Quinean conception of ontology. This will enable us to get a clearer view of the tension between this conception and ontological reductionism.

All sides agree that ontology is an attempt to take an inventory of the contents of the world. One wants to know whether the world contains such things as universals, tropes, gods, atoms, unicorns and so on. In Quine's hands, the project is made more precise. The ontological question is: what is there?<sup>8</sup> Specifically, are there universals, tropes, atoms, gods, unicorns and so on?

On Quine's view, ontological disputes concern what there is in the world. Philosophers who have different beliefs about what there is will endorse different ontologies. Any area of investigation can give rise to beliefs concerning what there is. In physics, one might come to believe that there are electrons; in sociology, that there are societies, and in biology, that there are organisms.

---

<sup>7</sup>This tradition includes Alston (1958), Burgess and Rosen (1997) and Yablo (1998). The arguments in this section could be replicated by philosophers who don't accept Quine's criterion. For instance, Wright (1983) and Dummett (1978a) have both offered arguments against reductionism issuing from a more Fregean conception of ontological commitment.

<sup>8</sup>Quine (1999b), p. 1.

These beliefs can be expressed in theories using the following sentences: ‘there are electrons’, ‘there are societies’, and ‘there are organisms’. If a theorist endorses these sentences, then she is committed to an ontology which includes electrons, societies and organisms. That is, by including a sentence which says that there are electrons in her theory, a theorist commits to an ontology including electrons. This suggests that ontological questions are to be resolved by the same sort of theorizing one pursues in science and ordinary life. So, one commits to an ontology by endorsing a theory. An ontologist’s task will be complete when she arrives at a correct set of beliefs about what there is. She will do this by arriving at a correct theory.<sup>9</sup> The correct ontology is the ontology of a correct theory.

Now, one need not explicitly include a sentence which says that there are Fs in one’s theory to have an ontological commitment to Fs. It often happens that a theorist discovers an ontological commitment of which she was not previously aware by finding that a sentence which says that there are Fs is entailed by the sentences explicitly in her theory. For this reason, a theory ontologically commits to Fs if and only if it *includes or entails* a sentence saying that there are Fs.

In order to prevent any potential confusion, I should mention that the relevant notion of entailment is logical entailment and, in particular, entailment in first-order logic. The appeal to an entailment relation in formulating

---

<sup>9</sup>I am speaking of a correct theory rather than *the* correct theory, since I do not presuppose that only one theory is correct.

the criterion might cause confusion because some might be tempted to conflate Quine's meaning with a use of 'entailment' to mean metaphysical necessitation. This conflation can be aggravated by the fact that Quine sometimes uses modal language in formulating his criterion. For instance, he sometimes says that a theory is committed to whatever must exist in order for the theory to be true.<sup>10</sup> This modal language may lead one to suspect that Quine thinks one ontologically commits to anything whose existence is metaphysically necessitated by the truth of one's theory. However, given Quine's skepticism about metaphysical modality, it is unlikely that he mean metaphysical necessitation by 'must'. It is overwhelmingly plausible that Quine uses modal language to mean that the theory commits to what it first-order entails exists.

Moreover, logical entailment is the only notion that makes sense here. The idea is that logic does not introduce new ontological commitments. It only exposes commitments latent in the the theory. In this sense, it is *ontologically innocent*. The same cannot be said for other notions of entailment such as necessitation. The sentences whose truth necessarily follows from the truth of a theory may introduce new ontological commitments, not latent in the theory. For instance, a theory which includes the sentence 'Kripke exists' will – on standard views – necessitate the truth of the sentence 'Kripke's mother exists'. But, it is a substantive discovery that there are mothers; a theory ontologically committed to people such as Kripke needn't also be ontologically committed to mothers. For this reason, only logical notions of entailment

---

<sup>10</sup>Quine (1999d) p. 103.

are suitable for assessing the ontological commitments of a theory, whereas notions such as metaphysical necessitation are unsuitable for determining the ontological commitments of a theory.

## 1.2 Ontological Reductionism

We are now in a position to see how projects in ontological reduction are motivated. A philosopher commits to a restrictive ontology because she endorses some particular theory of the world. This theory, she says, is *correct*. It is a true and comprehensive description of reality (or some limited portion of it). As a result, the philosopher comes to believe that her theory takes a sufficient inventory of the world. For example, many philosophers, impressed by explanatory power of physics, would subscribe to a doctrine which I will call ontological physicalism. This doctrine consists of two components.

### Ontological Physicalism

- The *Completed Physical Theory* will be a true and comprehensive description of reality.
- The ontology of the *Completed Physical Theory* will be exhaustive.

These philosophers believe that the explanatory power of physics is evidence for the claim that *there's nothing over and above* the physical. Some development of the physical theory will be an exhaustive description of what there is.

Similar claims have been made about other theories of the world, or of specific domains, and these claims have led to reductionist projects. For instance, philosophers have endorsed each the following:

**Ontological Atomism** A completed microphysical theory will be a comprehensive description of reality. The ontology of the completed microphysical theory is exhaustive.

**Ontological Naturalism** A completed natural science will be a comprehensive description of reality. The ontology of the completed natural science is exhaustive.

**Mathematical Minimalism** Set Theory is a comprehensive description of the mathematical domain. The ontology of set theory is exhaustive on the mathematical domain.

Each of these positions have been taken to motivate a reductionist project. A philosopher who endorses any of these positions endorses a restrictive ontology.

The need for a reductionist project arises when sentences of some *prima facie* acceptable discourse – normally sentences of daily life – seem to posit entities which are not included in restrictive ontology of one’s preferred theory. Theorists who adopt the above four positions will be troubled by the following ordinary sentences respectively.

- (1) There are shooting pains in my arm.
- (2) There are tables in the room.
- (3) There are many wrongs that you have done to us.
- (4) There are prime numbers between one and six.

The reductionist project is to *show* that the posits, or ontological commitments, of these sentences fit into the ontological commitments of her preferred theory of the world.

Consider sentence (1) above. This sentence entails the sentence ‘there are pains’, which says that there are pains. Thus, if (1) is true, then there are pains. If there are pains, then any theory which fails to ontologically commit to them does not take a sufficient inventory of the world. Thus, the physical theory, if it is a comprehensive theory of the world, must have pains in its ontology. The ontological reductionist project in the case of ontological physicalism is to show that pains are in the ontology of the completed physical theory. The reductionist will want to hold that these sentences are true. That is, she will want to hold that the sentence ‘there are pains’ as uttered with its standard meaning is true. This is what differentiates reductionism from *eliminativism*, which I will discuss in the next section.

Similar results hold for the other restrictive ontologies. The microphysical theory does not seem to say that there are tables, but sentence (2) clearly does say that there are tables. Therefore, the ontological atomist who holds that sentence (2) is true must show that tables are in the ontology of the microphysical theory. The ontological naturalist who agrees that sentence (3) is true must show that wrongs are in the ontology of completed natural science, since sentence (3) entails that there are wrongs. Finally, the mathematical minimalist who agrees that sentence (4) is true must show that numbers are in the ontology of set theory.

It is important to emphasize that Quine's criterion is acting as a straight-jacket here. Quine's criterion requires that anyone who holds (a) that sentence (1) is true and (b) that sentence (1) entails that there are pains show that pains are in the ontology of any comprehensive theory of the world. Thus, the ontological physicalist must hold that pains are in the ontology of the physical theory. Those who reject the view that ontology is an investigation into what there is face no such obligation. For, they may say that even though (1) is true, pains are not included in their ontology. At this point, it may be hard to see how such a position could be coherent. But, one aim of my dissertation is to open up conceptual space for such a position.

In what follows, I will take the attempted reduction of the ontology of sentence (1) to the ontology of the physical theory as a canonical case of ontological reductionism. This is not because I am especially committed on the topic. Rather, the reason that I take it as my paradigm is that there are more reductionist strategies available to the ontological physicalists. Certain strategies for effecting ontological reductions such as those involving token identities raise irrelevant issues in other cases of reduction such as the reduction of macroscopic sentences to the microscopic theory.<sup>11</sup>

Some philosophers might hold that standard reductionist claims are more or less plausible when put in the service of ontological physicalism than the other theses. For my purposes, this doesn't matter. I will assume that

---

<sup>11</sup>I am thinking in particular of the composition as identity view endorsed by Baxter (1988) and criticized by van Inwagen (2001a).

these reductionist claims are true and show that, even then, the reductionists fail to complete their goal of assimilating the ontology of some target sentences to the ontology of an underlying theory. Focussing on ontological physicalism allows me to consider a wider range of possible reductionist strategies.

### **1.3 Elimitivism and the Method of Paraphrase**

The ontological reductionist holds (a) that the sentence ‘there are pains’ is true and (b) that this sentence says that there are pains. Because she embraces the thesis of ontological physicalism, the reductionist is forced to hold that – despite first appearances – pains are in the ontology of the completed physical theory. An ontological physicalist may avoid reductionism by denying either (a) or (b). She might hold either that the sentence ‘there are pains’ is false as it is ordinarily used or that it is not used to say that there are pains. Either of these positions would absolve the ontological physicalist of the responsibility of showing that pains are already in the ontology of the physical theory. The physicalist would be in a position to deny that pains are among what there is.

Of course, sentences such as (1) ‘there are shooting pains in my arm’ are common in ordinary discourse and seem to be very useful. Given that she supposes that there are no pains, the elimitivist must explain the frequency and seeming usefulness of these sentences. For instance, a theorist might attempt to explain the frequency of assertions such as (1) by suggesting that there is

pervasive, but misleading evidence in their favor.<sup>12</sup>

Yet, the presence of misleading evidence does not explain the usefulness of sentences such as ‘I have a shooting pain in my leg’. This sentence can be used to diagnose diseases, to avoid dangers, and to predict behavior. Philosophers impressed by these facts might suggest that agents are not wholly in error when they make use of such sentences.

For Quine, a theorist can use ordinary sentences which have objectionable commitments, if she is willing to replace these sentences by others which do not have the objectionable commitments. A theory which contains the sentence ‘there are shooting pains in my leg’ is committed to pains just as much as a theory which contains the sentence ‘the sun is rising’ is committed to a rising sun. However, if a theorist is willing to paraphrase these sentences into others which do not entail that there are pains or that the sun is rising, then the theorist herself cannot be indicted with accepting the objectionable commitments.

[T]he nominalist need not even forego the convenience of variables having abstract entities as values, or abstract terms as substituends, provided that he can explain this usage away as a mere manner of speaking. [...] In so doing we do not commit ourselves to belief in such entities; for we can excuse our new form of quantification as a mere abridged manner of speaking, translatable at will back into an idiom which uses no statement variables and hence presupposes no propositions, no designata of statements. Under such a procedure propositions become *explicitly fictions*, in this sense: *there are*

---

<sup>12</sup>Merricks (2001) defends a thesis of this sort concerning physical objects.

*no such things*, from the standpoint of our unabbreviated official language, but we talk as if there were by dint of an eliminable shorthand.<sup>13</sup>

Quine is suggesting that a nominalist may use sentences such as ‘there are numbers’ that entail that there are abstract entities, so long as she is willing to replace these sentences by other sentences with no such consequences. The abstract entities (the numbers) become “fictions” in that there are no such things. Analogously, a political scientist who says that the Republicans are sanguine about the upcoming elections need not be committed to medieval theories of medicine, if she is willing to replace this sentence with a paraphrase. As a result of the availability of an acceptable paraphrase, the nominalist is in a position to hold that the abstract objects are *fictions* – there are no such things – and the political scientist is in a position to hold that there are no genuinely sanguine people.

Quine is fairly liberal about which paraphrases are acceptable. A paraphrase is acceptable if it performs the work required of the original sentence. In particular, the paraphrase need not be synonymous with the original. Quine says,<sup>14</sup> “paraphrasing into logical symbols is not unlike what we all do every day in paraphrasing sentences to avoid ambiguity. [...] In neither case is synonymy to be claimed for the paraphrase.” To test whether a paraphrase is acceptable, Quine proposes that it is sufficient that the theorist be willing to

---

<sup>13</sup>Quine (1939), p. 708-709. Emphasis added. The issue is also discussed in Quine (1999d), pp. 103-104.

<sup>14</sup>Quine (1960), p. 159.

replace the target sentence in one's theory with the paraphrase.

In recent years, there has been trend towards even greater liberalization of the means by which a speaker can escape the ontological commitments of her sentences. Fictionalists following the work of Field (1980) and van Fraassen (1980) have held that one may make use of sentences comprising a theory even if one cannot offer a sentence-by-sentence paraphrase of the theory.<sup>15</sup> These liberalized fictionalisms makes some uncomfortable, however. Many philosophers find it difficult to deny that a sentence such as (1) is true as it is ordinarily used, even taking their their ontological scruples into account.

Another sort of fictionalism, *content fictionalism*, denies that the ordinary sentences has the ontological commitments in the first place. In the case of (1), the content fictionalist denies that this sentence says that there are shooting pains in the speaker's arm.<sup>16</sup> Nonetheless, a content fictionalist who wants to maintain ontological physicalism is herself forced to deny that there are pains. If the content fictionalist were to acknowledge that there are pains, then she would be in the same position as the reductionist, having to explain how the ontology introduced by her utterance of 'there are pains' does not exceed the ontology of the physical theory.

There has been a growing literature criticizing views according to which

---

<sup>15</sup>Varieties of fictionalism have been discussed by among others by Gillett (2007), Lewis (2005), Rosen and Dorr (2002), and Varzi (2002).

<sup>16</sup>van Inwagen (1990) (chapter 10) takes this position about material object statements. According to van Inwagen, an ordinary utterance of the sentence 'there are tables' expresses the proposition that there are things arranged table-wise. Yablo (1998) discusses a similar position about mathematical objects.

a theorist may use a sentence which she ultimately regards as false.<sup>17</sup> I will not address this topic here. Rather, I will address a *prima facie* alternative to fictionalism: reductionism. I want to investigate whether it is possible to show that a sentence with *prima facie* problematic ontological commitments such as (1) can be shown to commit to nothing over and above what is in some underlying theory. The results of this discussion will generalize to the other cases of reduction I mentioned above.

## 1.4 The Problem for Reduction

Our reductionist agrees (a) that the sentence ‘there are pains’ is true and (b) that it says that there are pains. Therefore, she agrees that there are pains. However, she wants to say that the ontology of the physical theory is exhaustive: there is nothing over and above its ontology. Given Quine’s criterion, she can make these positions coherent only by showing that pains are in the ontology of the physical theory. Some statement of the physical theory – the theory which describes the physical properties and antics of micro- and macro-scopic objects – already commits to pains.

In order to show that this theory is committed to pains, the ontological physicalist must show that the physical theory includes or entails a sentence saying that there are pains. This theory says that there are electrons and protons, and perhaps wholes composed of these. It describes their behaviors.

---

<sup>17</sup>See for instance: Burgess and Rosen (1997), Burgess and Rosen (2005) and Stanley (2001). The issues are also discussed in Eklund (2005) and Sainsbury (2010).

However, it does not include the sentence ‘there are pains’. Now, at first glance, none of the sentences in or entailed by the physical theory is synonymous with the sentence ‘there are pains’. Thus, none of the sentences in or entailed by the theory says that there are pains. But if this is right, then the physical theory cannot have pains in its ontology. More explicitly,

**P1** No sentence contained in or entailed by the physical theory is *synonymous* with the sentence ‘there are pains’.

**P2** Therefore, the physical theory does not contain or entail a sentence which says that there are pains.

**P3** (Quine’s Criterion) A theory has Fs in its ontology if and only if it includes or entails a sentence that says that there are Fs.

**Therefore,** The physical theory does not have pains in its ontology.

If this *anti-reductionist argument* is successful, then one of the following is true. Either, the physical theory is not a complete theory of the world. Pains are among the constituents of the world, but not in the ontology of the physical theory. The ontology of the physical theory is not exhaustive. Or, the proposition that there are pains is false, and so is the sentence ‘there are pains’ which expresses it.

One can run similar arguments for the other forms of reductionism I mentioned. Consider for example, an ontological atomist who holds that the ontology of the microphysical theory is exhaustive. This theory describes that phenomena of very small objects. No sentence in this theory will be synonymous with the sentence ‘there are tables’. So, this theory will not have

tables in its ontology. Thus, either the sentence ‘there are tables’ with its standard meaning is false or the microphysical theory is not comprehensive.

## 1.5 Synonymy and Analyticity

In the remainder of this chapter, I will examine how this argument undermines proposed strategies for effecting ontological reductions. But first, I will consider and reject a challenge to the premises of the argument. I am holding Quine’s criterion fixed for the purposes of discussion. So, the only available targets are (P1), the thesis that no sentence contained in or entailed by the physical theory is synonymous with ‘there are pains’, and its supposed consequence (P2), the thesis that no sentence contained in or entailed by the physical theory *says* that there are pains.

The inference from (P1) to (P2) can be justified by the following two claims. Firstly, the sentence ‘there are pains’ says that there are pains. Secondly, if two sentences say the same thing, then they are synonymous. (P1) conjoined with these two claims entails (P2). The two claims entail that if some sentence in the physical theory says that there are pains, then it is synonymous with ‘there are pains’. If (P1) is true, then this cannot happen. So the auxiliary claims guarantee that if (P1) is true, then no sentence in the physical theory says that there are pains.

Concerning the first claim, I am simply assuming that ‘there are pains’ says that there are pains. This thesis is built into what I am calling the reductionist view, as opposed to, say, the content fictionalist’s view. It follows

that the first claim is not up for dispute at this time. Thus, anyone who wishes to challenge the inference from (P1) to (P2) must object to the second claim, that two sentences which say the same thing are synonymous.

What does it mean for two sentences to *say* the same thing in the sense required by Quine's criterion? The Quinean criterion is meant to be able to characterize ontological disputes such as the dispute between realism and nominalism. So the notion of "saying that" must be fine-grained enough to preserve these disputes. Two sentences which are true in all of the same circumstances needn't say the same thing in the required sense. Nor do *a priori* or *evidentially* equivalent sentences need need to say the same thing in the sense required by Quine's criterion. A nominalist may decline to assert any mathematical sentence. Her theory will be exhausted by statements about concrete individuals. Presumably, she should not be charged with ontologically committing to numbers. According to many realists, the existence of numbers is necessarily true and knowable *a priori*. Thus, the sentence 'there are numbers' will be necessarily and *a priori* entailed by any sentence of the nominalist's theory. It will be necessarily and *a priori* equivalent to any logically true sentence of the nominalist's theory.<sup>18</sup> But this is clearly the wrong result. It shouldn't follow from the realist's view that the nominalist is ontologically committed to numbers. Therefore, we shouldn't say that necessarily and *a priori* equivalent sentences say the same thing.

---

<sup>18</sup>I am assuming that logical truths are necessary and *a priori* true. This is a legitimate assumption in this context, since I am considering someone who holds that 'there are pains' is necessarily and *a priori* equivalent to some claim in the physical theory.

Whether two sentences say the same thing must depend on something further. Quine's criterion must be able to distinguish sentences saying that there are pains from necessarily and even *a priori* equivalent sentences. In order to make the right predictions about ontological commitment, the further features of the sentence that determine what it says should be its *structure*. Whether a sentence says that there are pains depends on whether it is the result of applying an expression meaning the same as 'there are' to an expression meaning the same as 'pains'. This means that whether two sentences say the same thing is a *hyperintensional* matter. Given that the requirements of saying the same thing are stringent, only synonymous sentences will satisfy the criterion.

Therefore, I think that the only way for an ontological reductionist to resist the argument is by rejecting (P1). That is, she must hold embrace a thesis I will call *Synonymy*.

**Synonymy** The physical theory contains or entails a sentence which is *synonymous* with 'there are pains'.

The truth of *Synonymy* would guarantee that pains are in the ontology of the final physical theory, since it would guarantee that some sentence in the final physical theory says that there are pains.

*Synonymy* may sound like a familiar, though unpopular, thesis in the philosophy of mind. Though he was not concerned with ontological reduction,

Carnap (1959) endorsed the position that every mental sentence can be translated into a physical sentence. Thus, the sentence ‘there are pains’ could be translated into some sentence of the physical theory. One might infer from this that ‘there are pains’ and the physical sentence are synonymous. One can show, however, that the two sentences are *not* synonymous in the strong sense required; they do not *say the same thing*. This can be shown even by standards which Carnap eventually comes to adopt.

Carnap’s standard for translating a sentence of the physical language into the psychological language requires only that they be verified by the same basic experiences. For Carnap, a sentence P in the physical language is the translation ‘there are pains’ just in case P and ‘there are pains’ are verified in the same situations.<sup>19</sup> However, in his ultimate account of what it takes for two sentences to be fully synonymous, Carnap (1988b) invokes a much more stringent criterion. Carnap suggests that the two sentence must be “intensionally isomorphic.” That is, not only must the two sentences as wholes be true in the same situations, but their parts must have the same intensions as well. This criterion of saying the same thing appeals to sub-sentential structure as is required by Quine’s criterion.

According to this more stringent criterion, the sentence ‘there are pains’ will not say the same thing as the corresponding sentence in the physical theory. For any sentence in the physical theory to say the same thing as ‘there

---

<sup>19</sup>Carnap (1959), pp. 166-167.

are pains', it will need to be true in exactly the same circumstances. Now, from the point of view of the physical theory, 'pains' is not a natural category. It is contestable whether any sentence of the physical theory will be true in all and only the circumstances in which 'there are pains' is true. However, if there is such a sentence it will surely be highly *complex*. It will need to describe the situation very richly, as one in which organisms exist and come to be in pain in entirely physical terms. Thus, even if this sentence does begin with 'there is', it will be orders of magnitude more complex than 'there are pains'. As a result, it will not say that there are pains according to Carnap's intensional isomorphism account, or any similar account which is sensitive to sentential structure. But, I argued, this is precisely what's needed to support Quine's criterion: an account of what a sentence says must differentiate sentences with different structures.

Carnap's weaker claim that some sentence in the physical theory is evidentially equivalent to 'there are pains' is often regarded as an extreme and implausible version of physicalism. One reason is that it entails that there is an analytic connection between the sentence 'there are pains' and the physical theory. I will call this thesis *analytic physicalism*.

**Analytic Physicalism** The truth of 'there are pains' follows from the physical theory by logic, definition and analytic principles of inference.

In most paradigm cases of explanatory and ontological reduction, the idea that the claims of a theory to be reduced need to be analytically entailed by the

claims of the reducing theory has simply not seemed plausible. The claim, for instance, that sentences about heat are analytically entailed by sentences in the underlying statistical mechanical theory was rejected forcefully by Nagel (1961) and has been highly unpopular ever since. In the case of the mental, these purported analytic entailments are even less plausible.

It's important to realize, however, that *Synonymy*, the thesis required to resist the anti-reductionist argument, is a much less plausible claim. For it requires not only that the sentence to be reduced be an analytic entailment of the underlying theory, but also that it share a structure with some specific claim in this theory. The complexity required of any physical sentence which even approximates the truth conditions of 'there are pains' will be so high that the two sentences will not be capable of saying the same thing. Thus, even a version of physicalism as strong as *Analytic Physicalism* is insufficient to yield *Synonymy*.

## 1.6 Ontological Reduction and Entailment

The anti-reductionist argument, if successful, undermines all forms of ontological reductionism which do not endorse *Synonymy*. In order to effect an ontological reduction, one must show that a theory has entities of some category, Fs, in its ontology, even though it *prima facie* has no such commitment. Given Quine's criterion, there is no way to show that a theory ontologically commits to Fs without showing that it contains or entails a sentence saying that there are Fs. But as we have just seen, this requires *Synonymy*.

In what follows, I will examine various reductionist strategies which attempt to show that the ontological commitments of target sentence S are contained in the ontological commitments of underlying theory T. A typical reductionist argument runs as follows. The reductionist makes a set of claims  $\Sigma$  about S and T. The truth of the claims in  $\Sigma$  is supposed to entail the desired result: that the ontological commitments of S are contained in T. I will argue that even granting the reductionist's claims in  $\Sigma$ , the ontology of S can be shown by Quine's criterion to exceed the ontology of T. I will show that many of these reductionist strategies rest on views about ontological commitment which are incompatible with Quine's criterion.

Many philosophers would say that genuine ontological reductions require that – in some sense – the truth of S is *determined* by the truth of underlying theory T. If the Fs are nothing over and above the Gs, then the existence of Fs shouldn't require anything more than the existence of Gs. Similarly, facts about Fs should be fixed by facts about Gs. Thus an exhaustive description of the Gs should guarantee the truth of any given sentence about the S. Of course, the notion of dependence or guaranteeing the truth at issue is controversial.

Philosophers have proposed a variety of accounts according to which the truth of T is supposed to determine or guarantee the truth of S. Sometimes these notions of determination are suggested to be sufficient conditions for ontological reduction, even if they do not entail *Synonymy*. These notions of determination of a theory T by a theory T\* include the following.

**Analytic Entailment** Theory T\* analytically entails the truth of T. That is, T\* follows from T *by meaning alone*.

**A Priori Entailment** Theory T\* *a priori* entails the truth of T.

**Necessitation** The truth of theory T\* necessitates the truth of theory T.

**Supervenience** The truth of the sentences of T necessarily varies with the truth of sentences of theory T\*.

I considered the notions of *a priori*, necessary and analytic entailment above. I argued that it is likely that these notions all fall short of guaranteeing *Synonymy*. For instance, it does not follow from the fact that a sentence such as ‘there are numbers’ is analytically entailed by the truth of the nominalist’s theory that ‘there are numbers’ is synonymous with some claim contained or logically entailed by the nominalist theory. Indeed, it is likely that no sentence in or logically entailed by the nominalist’s theory says the same thing as ‘there are numbers’. Thus, ‘there are numbers’ has ontological commitments not present in the underlying nominalist theory.

The purported analytic entailment may soften this consequence. It may, for instance, explain why the truth of ‘there are numbers’ seems so closely connected to the truth of the nominalist’s theory. It may explain why those who accept the nominalist’s theory really should accept that there are numbers as well. Nonetheless, it still holds that the ontology of ‘there are numbers’ exceeds the ontology of the nominalist’s theory.

## 1.7 Necessitation, Supervenience and Determination

Although I considered necessitation above, I will consider it in greater depth here because supervenience, which is framed in terms of necessitation, has been so important to debates about ontological reduction. The importance of supervenience might arise from the thought that analytic entailment is insufficient for ontological reduction on account of the fact that analyticity is a semantic notion and that *a priori* entailment is insufficient on account of the fact that *a priority* is an epistemic notion.<sup>20</sup> One might think that what is needed is some more metaphysical notion of determination.

Supervenience, and other varieties of necessary connection, have often been thought to be kinds of metaphysical determination. A philosopher holds that one class of properties, the mental properties in this case, supervenes on some underlying class of properties, the physical properties, just in case any difference in the distribution of mental properties necessitates some difference in the distribution of physical properties. In this case, a complete description of the physical properties would necessarily guarantee the truth of a complete description of the mental properties. Various tighter characterizations of supervenience have been appealed to in order to capture the relevant determination relationship.<sup>21</sup> All of the relevant notions of supervenience are framed in terms of metaphysical necessitation. For that reason, I will focus simply on

---

<sup>20</sup>Discussion of whether deriving metaphysical consequences of analyticity even makes sense can be found in Quine (1976a), Quine (1999e) and Boghossian (1997).

<sup>21</sup>Varieties of supervenience relation are discussed in Kim (1993a,c), McLaughlin (1995) and Bennett and McLaughlin (2005).

necessitation and consider cases where the truth of a theory T, the physical theory, necessitates the truth of a sentence S, ‘there are pains’. Everything I say will be directly applicable to richer notions of supervenience.

One hope has been that supervenience could be used to effect ontological reductions. Many philosophers have been enticed by David Armstrong’s idea that what supervenes is an “ontological free lunch.”

[W]hatever supervenes or, as we can also say, is entailed or necessitated, in this way, is not something ontologically additional to the subvenient, or necessitating entity or entities. Whatever supervenes is no addition of being.<sup>22</sup>

Armstrong would endorse the following: if the truth of ‘there are pains’ is necessitated by the truth of the physical theory, then ‘there are pains’ doesn’t introduce any ontology that is not already in the physical theory.

Armstrong may consistently maintain this position, because he is not himself a Quinean about ontological commitment. However, many philosophers attempt to embrace both Quine’s criterion of ontological commitment and Armstrong’s view that the necessary consequences of a theory do not introduce any new ontological commitments.<sup>23</sup> This combination, I claim, is unstable.

In order to evaluate whether supervenience is sufficient for ontological reduction within a Quinean framework, we must, once again, ask the following

---

<sup>22</sup>Armstrong (1997), p. 12.

<sup>23</sup>Sainsbury (2010) (p. 140) endorses a thesis of this kind with some qualifications.

two questions: (1) Does the sentence ‘there are pains’ ontologically commit to pains? (2) Is the physical theory ontologically committed to pain? Given the Quinean criterion, the answer to the first question is that the sentence ‘there are pains’ does indeed commit to pains. Again, given the anti-reductionist argument, we must once again say that the physical theory does not ontologically commit to pains. So, the ontology of ‘there are pains’ exceeds the ontology of the physical theory.

That the truth of the physical theory necessitates the truth of ‘there are pains’ may show that the two theories are connected in an intimate way. One who endorses the physical theory *should* endorse ‘there are pains’. Nonetheless, it does not show that pains are already in the ontology of the physical theory.

Even disregarding Quine’s criterion, this result is the way things should be. Whether there are necessarily connected, but distinct existents is a substantive issue in ontology. But, Armstrong’s view builds into the criterion of ontological commitment issues that should be left to substantive theorizing. It should, therefore, be rejected even by those who do not accept Quine’s criterion. We have seen that, given standard assumptions, some theories will necessitate the truth of other sentences which have ontological commitments not present in the underlying theory. Kripke’s existence guarantees the existence of his mother. Yet, not every theory committed to philosophers needs to be committed to mothers. Similarly, the existence of mathematical entities is thought to be necessary. If this is correct, then the truth of ‘there are numbers’ is necessitated by the theories that the nominalists would accept. So,

the nominalists' theory already has numbers in its ontology.

## 1.8 Reduction with Identity

Conceptions of physicalism based on supervenience have been criticized on a variety of grounds. Some of these criticisms have little to do with ontology.<sup>24</sup> However, one frequent observation which does seem addressed to those interested in ontological reduction is that supervenience claims do not entail identities. That the truth of claims about pains supervenes on the truth of claims in the physical theory does not entail that pains are physical events. Put broadly, the fact that the mental supervenes on, or is necessitated by, the physical does not entail that mental events *are among* the physical events or that mental properties *are among* the physical properties. In particular, the supervenience of the mental on the physical fails to entail the token identity theory, that any given mental event or state, such as a particular pain, is identical to some physical event or state. Nor does it entail the type identity theory, that any given mental property, such as the property of being a pain, is identical to some physical (or topic neutral) property.

It might be thought such identities are sufficient for ontological reduction. On this view, the reason that the supervenience is not sufficient to guarantee that the ontological commitments of 'there are pains' are already present in the underlying physical theory is that supervenience does not guar-

---

<sup>24</sup>Two critiques of the supervenience conception of physicalism are Horgan (1993) and Kim (1993b)

antee identity. The worry is that even given supervenience, mental states such as pains might be distinct from physical states and mental properties might be distinct from physical properties. For instance, Bennett and McLaughlin (2005) suggest that whether the mental is something over and above the physical depends on whether mental properties are identical to physical properties.

The nonreductive physicalist thinks that the metaphysically necessary supervenience of the mental on the physical means that mental properties are nothing over and above physical ones[.] [...] On the other hand, there is what might be called the “distinctness intuition” – if mental properties [...] are distinct from physical properties [...], then surely they count as something over and above them.<sup>25</sup>

A proponent of this view would argue that if the token or type identity theories are true, then nothing further is needed to show that the ontology of ‘there are pains’ is contained in the ontology of the physical theory. In particular, since all of the particulars and properties she believes in are physical, the ontology of the physical theory exhaustive. The identities establish that there is nothing over and above the physical.

I will argue, however, that the problem runs deeper. Given the way Quine’s criterion assesses ontological commitments, neither type nor token identities are sufficient to guarantee that the ontological commitments of ‘there are pains’ are already among the commitments of the physical theory. In the next two sections, I will examine proposals for effecting ontological reductions which appeal to token and type identities respectively.

---

<sup>25</sup>Bennett and McLaughlin (2005).

### 1.8.1 Token Identities

I begin with the token identity theory which says that every mental event or state is identical to some physical event or state.<sup>26</sup> Two forms of this theory have been defended. It has been held that each mentalistic predicate such as ‘is a pain’ is co-extensive with some predicate, such as ‘is a C-fiber firing’, which occurs in the physical theory. For instance, one might hold:

**Pain-Equivalence** For any  $x$ ,  $x$  is a pain if and only if  $x$  is a C-fiber firing.

**Belief-Equivalence** For any  $x$ ,  $x$  is a belief if and only if  $x$  is a B-fiber firing.

Proponents of a weaker form of the token identity theory hold that even if ‘is a pain’ is not co-extensive with any single predicate which occurs in the physical theory, every pain is nonetheless a physical event. A theorist of this sort might hold:

**Pain without Equivalence** Every pain is identical to some event described in the physical theory.

**Belief without Equivalence** Every belief is identical to some state described in the physical theory.

Many philosophers have adopted this weaker form of token identity theory under the influence of Davidson (2001b). This position is often combined with the idea that the distribution of mental predicates supervenes on the

---

<sup>26</sup>Among those committed to at least some form of the token identity theory are Davidson (2001b), Fodor (1999) and Smart (1959).

distribution of physical predicates; there can be no variation in the distribution of mental predicates without some variation in the distribution of physical predicates.

Some might take token identity theory as a sufficient condition for *ontological physicalism*. These philosophers would say that since all pains are physical events, the sentence ‘there are pains’ ontologically commits to nothing over and above what’s in the physical theory. For instance, Donald Davidson (2001c) describes<sup>27</sup> his “attempt to combine the view that psychological concepts have an autonomy relative to the physical with a monistic ontology[.]” One must suppose that by ‘monistic ontology’, he means physicalist ontology. Thus, he seems to think that the token identity theory is a sufficient condition for ontological physicalism.

In order to effect an ontological reduction, one must show that pains are in the ontology of the physical theory. I see the token identity theorist as arguing in the following way. The physical theory ontologically commits to C-fiber firings located events. Suppose that all pains are events of C-fiber firings. There are some pains. Thus, the physical theory ontologically commits to pains. More, abstractly,

**Token-1** Theory T ontologically commits to Fs.

**Token-2** All Gs are Fs.

**Token-3** There are Gs.

---

<sup>27</sup>p. 240.

**Token Principle** If some Gs are Fs and theory T ontologically commits to Fs, then theory T ontologically commits to Gs.

**Therefore** Theory T ontologically commits to Gs.

If this argument is correct, one may hold as a consequence that ‘there are pains’ doesn’t introduce any ontological commitments not already in the ontology of the physical theory.

Unfortunately, the token principle invoked to license the argument is incorrect given Quine’s criterion. According to Quine’s criterion, a theory has Fs in its ontology just in case it says that there are Fs. The physical theory says that there are, say, C-fiber firings. But, it does not say that there are pains. It doesn’t matter that pains, in fact, are among the C-fiber firings. It doesn’t matter, since it doesn’t matter whether there actually are pains. What matters is whether the physical theory *says* that there are pains. And, it is clear that the physical theory may say that there are C-fiber firings without saying that there are pains, even if the pains are among the C-fiber firings. Similarly, a theory can endorse the existence of dogs without endorsing the existence of, say, brown dogs, even if brown dogs are among the dogs. Indeed, a theory can endorse the existence of dogs without saying that there are brown dogs even if all and only dogs are brown dogs.

The false token principle is motivated, I believe, by a mistaken understanding of the grammar of the expression ‘ontologically commits’. One says that a theory ontologically commits to universals, particulars, gods, unicorns or what have you. It is tempting to conclude that a theory ontologically com-

mits to some specific individuals. If this were right, then the token principle is correct: the physical theory ontologically commits to pains if pains are a subset of the spatio-temporal events. But the temptation must be resisted.

This can be demonstrated in two ways. First, one goal of Quine's criterion is to allow a theorist to describe the ontological commitments of a theory she disagrees this. He calls this the problem of Plato's Beard. Thus, one might try to describe the ontological commitments of a theory that says that there are unicorns. This theory would ontologically commit to unicorns. But, if ontological commitment is construed as a relation between a theory and some individuals, then there must be unicorns that the theory is committed to. But there are no unicorns at all! Thus, an ontological commitment to unicorns can't be a relation to specific unicorns.

The other way to demonstrate that an ontological commitment to Fs isn't a relation to specific Fs is by considering the fact that to ontologically commit to Fs one need only say that there are some, but one needn't have in mind any Fs in particular. Quine, for instance, says,

‘Some dogs are white’ says that some things that are dogs are white; and, in order for this statement to be true, the things over which the bound variable something ranges must include some white dogs[.]<sup>28</sup>

It's clear in this case that although some white dogs must exist in order for the statement to be true, there are no particular white dogs which must exist.

---

<sup>28</sup>Quine (1999b), p. 13

Thus, the statement ontologically commits to white dogs, though it doesn't commit to any white dogs in particular.

The above considerations demonstrate again that the ontological commitments of a theory depend on the hyperintensional features of the sentences that compose it. Indeed, ontological commitment itself is a hyperintensional relation. A theory may ontologically commit to Fs without ontologically committing to Gs, even if the Fs are the Gs. This point is made by Church (1958), who points out that a theory which commits to unicorns needn't also commit to trolls even though all and only unicorns are trolls.<sup>29</sup> The fact that ontological commitments are hyperintensional undermines the thought behind the principle needed to infer the truth of ontological physicalism from the truth of the token identity theory. Even assuming that pains are among the spatio-temporal events and that the physical theory ontologically commits to spatio-temporal events, it does not follow that the physical theory ontologically commits to pains.

### 1.8.2 Type Identities

The fact that ontological commitments ascriptions are intensional – a commitment to Fs is not a relation to the individual Fs – might lead one to think that ontological commitment is actually a relation to properties or kinds. One ontologically commits to pains when one says of the *kind* pain that it is instantiated. Ontological disagreements are disagreements about the kinds

---

<sup>29</sup>pp. 701-702, footnote 3.

of things there. A philosopher tempted by this line of reasoning might then think that the type identity theory – the view that every mental property or kind is identical to some physical property or kind – is sufficient to guarantee the ontological reduction of the mental to the physical. Jaegwon Kim (2000), for instance, suggests that identities between mental properties and physical properties provides the ontological simplification which is lacking from merely token identities between mental states and physical states.<sup>30</sup>

Suppose that the kind pain is identical to some physical or topic neutral kind, say the kind C-fiber firing. If ontological commitment is a relation to kinds, it follows that anyone who ontologically commits to C-fiber firings also ontologically commits to pains. Though this line of reasoning is tempting, it is too quick. Quine’s criterion says that a theory commits to Fs just in case it includes or entails a sentence which says that there are Fs. If ontological commitment is a relation to kinds, then every ontological commitment must correspond to some kind.

But, this consequence is problematic. Some theories explicitly say that there are kinds. These theories are ontologically committed to kinds. Similarly, a theory may say that there are kinds that do not instantiate themselves. A theory of this sort would have kinds that do not instantiate themselves in its ontology. Thus, if we agree that a theory can ontologically commit to kinds

---

<sup>30</sup>After complaining (p. 97) that mere token identities do not give rise to ontological simplification, he says (p. 99) that property identities give “satisfying responses to both the explanatory and the ontological questions that arise for bare bridge laws [token identities] unaccompanied by [property] identities.”

which do not instantiate themselves and think that ontological commitment is a relation to a kind, then we must posit that there is a kind of kinds which do not instantiate themselves. It is difficult to posit such a kind, however, for familiar reasons having to do with the paradoxes. I think that the lesson to draw from this fact is that an ontological commitment to Fs is not, in general, a relation to the kind F.

But, one doesn't need to think ontological commitment is a relation to kinds in order to infer the truth of ontological physicalism from the type identity theory. It is sufficient for the following principle to be true.

**Type Principle** If theory T ontologically commits to Fs and the kind F is identical to the kind G, then T commits to Gs.

In the case of a theory which ontologically commits to kinds that don't instantiate themselves, the principle might simply fail to apply. Once this type principle is in place, one can then argue for the ontological reduction of the mental to the physical from the assumption of the type identity theory in the following way.

**Type-1** The kind pain is identical the kind C-fibers firing

**Type-2** The physical theory ontologically commits to C-fibers firing.

**Therefore** the physical theory commits to pains.

Given the *type principle*, this argument is valid.

Unfortunately, given the assumptions under which we are operating, either (Type-1) or the *type principle* is false. I will show that if the *type principle* is true, then the first premise of the argument (Type-1) is false. In other words, if the *type principle* is true, then the kind pain must be distinct from the kind C-fiber's firing.

First note that the type principle and Quine's criterion have the following consequence.

**Consequence** If the kind F is identical to the kind G, then any theory which includes or entails a sentence which says that there are Fs also includes or entails a sentence which says that there are Gs.

To see this, suppose that the kind F is identical to the kind G. Suppose that theory T contains or entails a sentence which says that there are Fs. Then by Quine's criterion, it is ontologically committed to Fs. But, by the *type principle*, it is also ontologically committed to Gs. Applying Quine's criterion once again, the theory includes or entails a sentence which says that there are Gs.

Recall that we are operating under the assumption that the physical theory does not include or entail a sentence which says that there are pains. The argument appealed to the fact that whether a theory says that there are pains depends on the semantic structure of the sentences comprising the theory. The semantic structure of any sentence in the physical theory with the same truth conditions as 'there are pains' would be so complex that it could not say

exactly the same thing. So, the physical theory does *not* include or entail a sentence which says that there are pains. So the physical theory is committed to C-fiber firings, but not to pains. It follows from (Consequence) that the kind C-fibers firing is not the kind pain. Therefore, if the *type principle* is true, then the kind pain is not identical to the kind C-fibers firing. One of these premises must be false. Either way, the purported reduction fails!

## 1.9 Conclusion

The lesson to draw is that Quine's criterion over-generates ontological disagreement between theories. If Quine's criterion is correct, then the ontological commitments of a psycho-physical theory which says that there are pains will always exceed the ontological commitments of a purely physical theory, since the former says that there are pains and the latter does not. Quine's criterion dooms projects in ontological reduction to failure.

This failure is beginning to be appreciated and to motivate new approaches to ontology.<sup>31</sup> In this chapter, I hope to have made these difficulties more acute than they have been previously. The next chapter will examine the nature and motivations for Quine's criterion more deeply. I will argue that Quine's criterion actually rests on substantive assumptions, assumptions which can be challenged and that Quine's criterion can be consistently denied

---

<sup>31</sup>Among philosophers revisiting Quine's criterion in light of worries about the possibility of ontological reduction are Azzouni (2004), Cameron (2008), Dorr (2005), Fine (2009), and Sider (2009).

without obvious absurdity.

The fourth chapter begins an argument that that some form of ontological reduction is *necessary* in order to resist neo-Carnapian worries about the coherence of ontology.<sup>32</sup> Thus, ontological reduction is not to be pursued only by extremists rabidly committed to a minimalist ontology. Rather, it is an essential commitment of anyone who holds that the world can be completely described. In the fifth chapter, I examine and reject the dominant alternative to Quine's criterion, which I call the *Ideal Language Method in Ontology*. This view is closely allied to traditional analytic metaphysics since it was articulated by Russell (1989) in *The Philosophy of Logical Atomism*, but has been undergoing a revival, inspired primarily by the works of Sider (2009) and others. In my final chapter, I discuss my alternative to ideal language ontology.

---

<sup>32</sup>The classical statement of these worries is Carnap (1988a). Neo-Carnapian positions have been developed by Chalmers (2009) and Hirsch (1993, 2002, 2005).

## Chapter 2

# Arguments for Quine's Criterion of Ontological Commitment

Many of the most important debates in philosophy concern ontology. The debates between nominalists and realists, between atheists and theists, and between physicalists and dualists are ontological; they concern the contents of the world. The nominalist denies that universals are among the contents of the world. The realists holds that they are. The atheist denies that gods are among the contents of the world. The theist holds that they are. The physicalist denies that the world contains anything nonphysical. The dualist believes that the world does contain nonphysical things. Disagreements about ontology are disagreements about what *theories* one should endorse. If, for instance, nominalism is true, then one shouldn't endorse a theory which ontologically commits to universals. If realism is true, then one's theory should commit to universals.

In this chapter, I will not discuss what the right ontology is, but how one discerns a theory's ontological commitments. How do the sentences which make up a theory determine whether the theory has gods, bare particulars or medium sized dry goods in its ontology? In particular, I will examine

Quine's criterion, the most widely accepted standard for determining a theory's ontological commitments.

According to Quine,<sup>1</sup> the ontological question is: What is there? This view about the goal of ontology leads Quine to a view about what is in the ontology of a given theory. A theory's ontology includes what it *says there is*. Quine's criterion for determining a theory's ontology can be broken into two components.

**(Quine's Criterion)**

**Sufficiency** If a theory says that there are Fs, then it has Fs in its ontology.

**Necessity** If a theory has Fs in its ontology, then it says that there are Fs.

Both components of Quine's criterion were used in the argument against reductionism that I gave above. I will focus on (Sufficiency). This is not because I think that (Necessity) is uncontroversial, or even true. It may be that a theory ontologically commits to, say, properties by containing predicates, and not by explicitly saying that there are properties. I am interested in the (Sufficiency) thesis because this thesis can be used to indict a theory for having an undesirable ontological commitment. (Necessity) can only show that a theory does not have an ontological commitment. Since ontologists often want to minimize their ontological commitments, (Sufficiency) is more frequently at issue in debates over ontology.<sup>2</sup>

---

<sup>1</sup>Quine (1999b), p. 1.

<sup>2</sup>Of course, (Necessity) is sometimes challenged by those who want to show that their opponents have more ontological commitments than they admit to.

In what follows, I will more fully elaborate Quine's criterion. I will then develop arguments for it which many have found persuasive. Some philosophers have thought that it is trivial, obvious or even true by definition. Other philosophers hold that there is a deep connection between the semantics of the expression 'there is' and the project of ontology. I will argue that neither sort of argument is completely successful. However, each argument will reveal important constraints on the project of ontology.

## 2.1 Theories and Quine's Criterion

As I framed Quine's criterion, a theory commits to what it says that there is. This is how Quine sometimes phrases things.<sup>3</sup> However, what is wanted is a procedure that derives a theory's ontology from the sentences that comprise it. Thus, I need to be clearer about the conditions under which a theory says that there are Fs. There are two ways a theory can say that there are Fs. It is clear that if a theory includes a sentence which says or means that there are Fs, then the theory says that there are Fs. Thus, by Quine's criterion, the theory includes Fs in its ontology. For example, a theory which includes the sentence 'there are Fs' used with its standard meaning will thereby have Fs in its ontology.

An ontologist needn't explicitly say that there are Fs for her theory to commit to Fs. One often determines a theorist's ontological commitments by

---

<sup>3</sup>Quine (1999b), p. 15.

drawing out the consequences of the things she explicitly says. A theory says that there are Fs if and only if it contains *or entails* a sentence saying that there are Fs. So, a theory which says that either there are universals or tropes and also says that there are no tropes thereby says that there are universals. By Quine's criterion, the theory commits to universals.

In order to make discussion smoother, it will be convenient to suppose that theories are closed under logical entailment. For my purposes, any theory which includes the claim that there are either universals or tropes and the claim that there are no tropes will thereby also contain the claim that there are universals. Given this assumption, Quine's criterion can be more precisely formulated as follows: a theory ontologically commits to Fs just in case it includes a sentence saying that there are Fs.

## 2.2 The Triviality Argument

I begin with the argument that purports to show that Quine's criterion is trivially true. There are two versions of this argument. One version, (A), runs as follows. The word 'ontology' was either meaningless before Quine's time or it denoted a pointless, impossible project. Because he found a good use for the word, Quine defined the expression 'theory T ontologically commits to Fs' to mean that theory T includes a sentence which says that there are Fs. Therefore, Quine's criterion is true by definition. Proposing an alternative criterion of ontological commitment just misses the point.

Many philosophers would concede that Quine was picking up on a pre-

existing practice. The ontologists of yore were engaged in some sort of project which runs through Quine to the present day. Advocates of the other version, (B), of the triviality argument suggest that it is nonetheless trivial that the aim of this project is to determine what there is and therefore that a theory's ontology is just what the theory says there is. I will develop and respond to the (A) version of the triviality argument in the next section. I then turn to the (B) version.

### 2.2.1 (A): Defining Away the Issue

The (A) version of the triviality argument is defended by Burgess (2008a) and Burgess and Rosen (1997).<sup>4</sup> According to this view, ontology began with Quine.<sup>5</sup> The word 'ontology' as used by Quine and his successors was meant to describe a different project from the project his predecessors described using words such as 'ontology' and 'metaphysics'. On such a view, Quine wouldn't need to have offered any arguments to show that his criterion is correct. For instance, commenting on Azzouni (2004), Burgess remarks,

This work makes the mind-boggling claim that one can sincerely assert "There are such things as numbers" and even "There are such things as numbers' is literally true" and *still* not be "ontologically committed" to numbers. ... In an effort to make some kind of sense of Azzouni's nonsensical claim I was led to speculate that what he

---

<sup>4</sup>"These facts suggest the need for a term for an implication to the effect that there are Ss, whether or not accompanied by an assertion to the effect that there are Ss. ... Quine introduced 'T is ontologically committed to Ss' as short for 'T logically implies that there exist Ss'." Burgess and Rosen (1997), p. 226.

<sup>5</sup>Compare Burgess and Rosen (1997) p. 18.

has done has been to take Quine's phrase "ontological commitment" and substitute for Quine's understanding of "ontological," on which the word is merely a fancy synonym for "existential," some other understanding of "ontological," presumably adopted from some pre-Quinean tradition.<sup>6</sup>

I will first argue that Quine does not intend to redefine the word 'ontology' as Burgess suggests. Rather, Quine uses 'ontology' to describe a project which continues the tradition of his predecessors, notably Russell. I will then discuss Burgess's motivations for endorsing the (A) version of the triviality argument. Burgess seems to think that 'ontology' as used before Quine did not describe a coherent project and that Quine set it right. This may be true. But it will rely on substantive considerations about what pre-Quinean ontologists were doing.

### **2.2.1.1 Did Quine Mean to Define 'Ontology'?**

I will begin with the two facts cited most frequently to show that Quine takes previous uses of 'ontology' to be meaningless and is therefore stipulating a new meaning. The primary evidence is textual. In his discussion of Carnap, Quine says,

When I inquire into the ontological commitments of a given doctrine or body of theory, I am merely asking what, according to that theory, there is. I might say in passing, though it is no substantial point of disagreement, that Carnap does not much like my terminology here. Now if he had a better use for this fine old word 'ontology,' I should

---

<sup>6</sup>Burgess (2008a), pp. 91-92.

be inclined to cast about for another word for my own meaning. But the fact is, I believe, that he disapproves of my giving meaning to a word which belongs to traditional metaphysics and should therefore be meaningless. Now my ethics of terminology demand, on occasion, the avoidance of a word for given purposes when the word has been preempted in a prior meaning; meaningless words, however, I feel freest to specify meanings.<sup>7</sup>

This passage is frequently cited in order to show that Quine views ‘ontology’ as meaningless and means to redefine it.<sup>8</sup> However, a close reading of the passage reveals that it is not good evidence for Burgess’ interpretation of Quine.

Importantly, Quine begins by pointing out that *Carnap* objects to his use of the word ‘ontology’, because *Carnap* thinks that ‘ontology’ is meaningless. Quine defends himself by saying that even assuming Carnap’s premise that traditional uses of ‘ontology’ are meaningless, one cannot infer that Quine’s own use of the word ‘ontology’ is illicit. So, the passage begins by considering an objection based on *Carnap’s* views.

Admittedly, Quine does not *immediately* repudiate these views, but rather argues that they don’t entail that his use of ‘ontology’ is illegitimate. Some might take this as *prima facie* evidence that Quine sympathizes with Carnap’s views. But, this evidence is fairly weak, since Quine does not *endorse*

---

<sup>7</sup>Quine (1976b), pp. 203-4.

<sup>8</sup>Burgess and Rosen (1997) (p. 18) say “At the beginning of one of his works, Quine (1951), he explains his ‘ethics of terminology’. Terms that always were meaningless or that have fallen into desuetude he feels free to assign a new meaning. Hence his new usages of ‘ontological’ and ‘ideological’. The current usage of ‘abstract’ should probably be viewed as of a piece with these, except that Quine provides no snappy formula by way of definition.” Burgess (2008a) also mentions this passage (p. 94-95).

Carnap's position either. Moreover, in the very next breath, Quine goes on to say,

I suspect that the sense in which I uses this crusty old word has been nuclear to its usage all along.<sup>9</sup>

Quine must have some grip on what people were getting at when they used 'ontology' if he is to find that answering the question 'what is there?' was nuclear to the usage. This surely makes Burgess' interpretation of this passage suspect.

More troublingly, this interpretation of Quine seems to make nonsense of the works in which Quine actually sets out his criterion of ontological commitment. Quine repeatedly<sup>10</sup> argues that not all of the singular terms or meaningful expressions used in expressing a theory generate ontological commitments. He argues that a theory may deploy a singular term without committing to its referent. It may deploy a meaningful predicate without ontologically committing to a property it expresses. Moreover, Quine argues<sup>11</sup> that attempts to avoid ontological commitment by claiming that certain objects are not real are illegitimate, since they invoke "empty honorifics and perjoratives." This dialectic would be incomprehensible if Quine were merely defining 'ontology'. Quine's opponents would not be wrong, but simply be engaged in a different project.

---

<sup>9</sup>Quine (1976b), pp. 203-4.

<sup>10</sup>In Quine (1976c), Quine (1939) and Quine (1999b).

<sup>11</sup>Quine (1939), p. 704.

Russell, in particular, is troubling for Burgess' interpretation. In the *The Philosophy of Logical Atomism*, Russell describes the task of taking an "inventory of the world" which sounds strikingly similar to Quine's description of the ontological project. Russell even uses the same words to informally describe this project that Quine does. For instance, he speaks of the "entities assumed" by an agent, by which he means to refer to the agent's ontology.<sup>12</sup> Quine, also, famously describes<sup>13</sup> a theory's ontological commitments as the "entities assumed." Though Quine and Russell have their differences about how to determine which entities are assumed by a theory, it seems reasonable to see them as engaged in the same project.

I can't help but conjecture that Burgess ignores these commonalities because he is primarily concerned about Quine's relation to Carnap who, of course, rejects 'ontology' as meaningless. Once one takes seriously the fact that Quine has substantive criticisms of other criteria of ontological commitment, one cannot help but take note of the relation between Quine and other philosophers such as Meinong, Russell and Frege who were concerned with ontology.

The other piece of evidence sometimes offered in favor of Burgess' interpretation is that the expression 'ontological commitment' was not widely

---

<sup>12</sup>Russell (1989), (pp. 221-222), says "you run less risk of error the fewer entities you assume. [...] [E]very diminution in the number of entities increases the amount of work for mathematical logic to do in building up things that look like the entities you used to assume."

<sup>13</sup>"To be assumed as an entity is, purely and simply, to be reckoned as the value of a variable." (Quine (1999b), p. 13.)

used before Quine's time.<sup>14</sup> Burgess may be correct, that Quine defined the expression 'ontological commitment'. But that hardly matters. In order for the (A) version of the triviality argument to succeed, Quine must have defined 'ontology' and not merely 'ontological commitment'. Talk of a theory's "ontological commitments" is nothing more than talk of what is "in its ontology." That is, if Quine introduced the expression 'Theory T is ontologically committed to Fs', then he did so to paraphrase 'Fs are in theory T's ontology'. Further, even if Quine's use of 'ontology' and 'ontological commitment' are both novel, that would not show that he cut a new notion from the cloth, since they closely match existing notions with which he was familiar. As I mentioned above, this includes Russell's notion of an agent's 'inventory of the world' and 'assumed entities'.

One final point on this matter. Even if – as is contrary to fact – Quine had sat down with the intention of redefining 'ontology', this would not entail that 'ontology' as used by contemporary ontologists has this new meaning. Most ontologists today use the word to describe the projects of philosophers who do not endorse Quine's criterion. David Armstrong, for instance, believes<sup>15</sup> that if facts about one sort of entity supervene on facts about another sort, then the former are an "ontological free lunch." They are "no increase in being." Even those philosophers who think that Armstrong's

---

<sup>14</sup>"For 'ontological commitment' was a phrase without use and therefore without meaning until Quine gave it a meaning by stipulative definition; and that stipulative definition makes sincere assertion that there are numbers, or that 'There are numbers' is literally true, a more than sufficient condition for 'ontological commitment' to numbers." Burgess (2008a) (p. 92).

<sup>15</sup>Armstrong (1997), p. 12.

project is confused or incoherent would hesitate to say that it is not *ontology*. Numerous other philosophers such as advocates of the view that singular terms are the marks of ontological commitment are also considered to be ontologists, despite their disagreement with Quine.

This point is not isolated to anti-Quineans such as Armstrong. Even a philosopher as sympathetic to Quine as Church – one who even believed that Quine’s criterion is trivially correct at that – didn’t believe that it was correct *by definition*. Church proposed that one must argue that one’s criterion of ontological commitment is correct. Church suggests<sup>16</sup> that one judge the correctness of a criterion by “how closely it reproduces the presystematically available notion of existence.” One must wonder how it can be a mere matter of stipulation that Quine’s criterion can test for one’s ontology, given that so many of the contemporary users of the word ‘ontology’ believe that Quine’s criterion requires an argument. I will revisit Church’s position when I explore the (B) version of the triviality argument.

### **2.2.1.2 The Project of Ontology**

Sometimes it looks as though Burgess and Rosen (1997) take the (A) version of the triviality argument to follow from mere Quine exegesis. I have suggested reasons for doubting that this is the correct interpretation. Burgess (2008a), however, suggests another reason for thinking that Quine defined ‘ontology’. According to Burgess, the project described as ‘ontology’ before

---

<sup>16</sup>Church (1958), p. 1012.

Quine is incoherent. This stands opposed to the practice described by the word after Quine, which is, Burgess thinks, coherent. Philosophers should therefore abandon any attempt to determine whether Quine’s understanding of the ontological project is correct, and just accept it.

Burgess thinks that ‘ontology’ before Quine described an attempt to ‘produce a description of reality “just as it is in itself,” or equivalently a description of the universe as God sees it, and not as we see it.’<sup>17</sup> To show that this description is accurate, he cites the examples of such “ontologists” as William James, Galileo and Kepler.<sup>18</sup> Burgess seems to object to this project on the grounds that it cannot be completed. Human beings, thinks Burgess, cannot go beyond their own “conceptual schemes.” In order to have any description of the world, one needs a language. The fact that certain sentences of this language are true is due in part to convention and in part to “the world” as it is in itself. However, one cannot separate out the conventional part from the nonconventional part – each sentence is “white with convention” and “black with fact” though no one sentence is wholly black or wholly white as Burgess quotes Quine.<sup>19</sup> Thus, according to Burgess, there is no way to describe reality “as it is in itself.” Instead, one must settle for one’s own individual and partially conventional description. Quine’s conception of ontology is coherent

---

<sup>17</sup>Burgess (2008a), p. 93.

<sup>18</sup>I do not mean to downplay importance of these figures as ontologists, but surely there is more to the project that these figures might have called ‘ontology’ than is easily extractable from this metaphor. And surely, there are other figures, Leibniz, Hume, Husserl, Moore and Russell come to mind, who could have elaborated this project with greater clarity and without appeal to the metaphor of a theory read right off of the world.

<sup>19</sup>Burgess (2008a), p. 94 and Quine (1976a).

because it is compatible with that fact. Burgess says,<sup>20</sup> “[t]he new enterprise of “ontology” in the post-Quinean sense is simply a glorified taxonomy, an attempt to catalogue what sorts of objects there are in reality, not “just as it is in itself” but as apprehended by us through our everyday and technical language, our commonsense and scientific theories.”

There is something correct about Burgess’ description of the historical situation. Some pre-Quinean ontologists did in fact describe their job as figuring out what reality is like “in itself.” Burgess thinks that in order to engage in this project, a theorist must speak from a *theory independent perspective*. But this is not an accurate description of what is required. Rather, the ontologists of old must have believed that there is some stuff out there in the world, and in order for a theory to be wholly true and to be adequate, it must report on this stuff and nothing else. This task does not require that one form a *wholly new theory or framework* with which to describe reality as it is in itself. Nor does it require that one reprint the “book of the world as laid down by god.” Burgess is right that these projects are incoherent; every human theory is written by human hands. The project requires rather that one extend or reform one’s current theory to accurately describe the features of reality which must be captured by any theory in order for it to be correct. The ontologist’s goal is not to commit to an ontology without committing to any theory, but rather to commit to an ontologically correct theory – of which there may be many. And there is as yet no reason to suppose that this project

---

<sup>20</sup>Burgess (2008a), p. 95.

requires one to adopt a perspective which transcends one's theory.

### 2.2.2 (B): Triviality without Analyticity

I turn now to the (B) version of the triviality argument. The proponent of this version of the triviality argument concedes that ontology before Quine was a legitimate project which Quine intended to clarify and continue. She will argue that Quine's criterion nevertheless follows from basic facts about the project of ontology.

There are two basic facts about ontology which are salient. The first is that 'ontology' is a technical term. Even if it was in use before Quine, it needs some explanation. The same goes for equivalent expressions used by others. For instance, Russell's idea of taking an inventory of the world is clearly metaphorical and must be explained.

The second basic fact is that ontologists describe their project as an attempt to answer a variety of questions. Quine of course says that the ontological question is: what is there? But he also speaks of the ontology of a theory as the entities it assumes. This would lead one to suspect he thinks of the ontological question as asking: what entities are there? Burgess, in the quote given above, characterizes ontology not simply as an attempt to determine what there is, but as the attempt to determine what sorts of *objects* there are *in reality*. Church mentions a few other *ontology questions*,

There are familiar philosophical problems which concern what may be called *ontology*, commonly phrased by asking whether something

or some category of things is “real,” or whether they “exist,” or whether they have “real existence.”<sup>21</sup>

These questions have been associated with the traditional conception of ontology just as much as ‘what is there?’. If the project of ontology is legitimate, it surely can be explained in terms of the notions deployed in these questions: being, existence, entity, reality and so on.

I will use this fact to develop a generalization of Quine’s criterion of ontological commitment. This generalized criterion should be acceptable even to the Quinean, since Quine’s criterion will follow from this generalized criterion if certain background assumptions hold. Arguments in the work of Quineans including Alonzo Church (1958) and Peter van Inwagen (2001b), I will argue, are meant to show that these background assumptions do in fact hold.<sup>22</sup> Thus, if Church and van Inwagen are correct, Quine’s criterion follows from basic considerations about the project of ontology.

The fact that ontologists have framed their project using these *ontology questions* can be used to support a variety of claims about ontological commitment. Suppose that a theory includes a sentence applying every legitimate ontology expressions to entities of some category, the Fs. The theory says that there are Fs, that Fs exist, that Fs are entities, that Fs are real, and so on. Surely, the theory is ontologically committed to Fs. Similarly, if a theory says

---

<sup>21</sup>Church (1958), p. 1008.

<sup>22</sup>van Inwagen (2009) also expands on these issues.

that it is not the case that there are Fs, that Fs do not exist, and so on, then the theory is not ontologically committed to Fs.

It makes sense to say that each claim of this kind introduces an *apparent ontological commitment* to Fs. A theory which says that there are Fs certainly *appears* to be ontologically committed to Fs. So, what happens when a theory applies some, but not all, of these ontology expressions to Fs? The theory may say that there are Fs, but be silent on whether Fs exist or are entities. What are the ontological commitments of such a theory? I am inclined to say that the theory does, in fact, have Fs in its ontology. The theory clearly has the *appearance* of an ontological commitment to Fs. Moreover, there is nothing else in the theory to defeat this appearance. So, the appearance should stand, and the theory should be indicted with a commitment to Fs.

The possibility that a theory includes a claim apparently ontologically committing to Fs, but also includes the negation of such a claim, is more troubling. A theory may say that there are Fs but also deny that Fs exist, are entities or are real.<sup>23</sup> Now these theories may be trivially false, and I will consider the possibility that this is the case. But mere falsity and even absurdity do not absolve us from the responsibility of determining the ontological commitments of these theories. My goal in this section is to determine what the ontological commitments of a given theory are, not to determine what the

---

<sup>23</sup>Self described Meinongians such as Routley (1982) and Parsons (1982) hold that there are things that do not exist, as does Azzouni (2004). Fine (2001) holds that there are things that are not real. Priest (2005) holds that some things do not exist, but not that *there are* some things that don't exist.

correct ontology is. This holds for theories I might disagree with just as much as theories I am inclined to endorse. So, what ontological commitments should be ascribed to such theories?

It is desirable to have a binary distinction between theories which are ontologically committed to Fs and those that are not. I believe that this binary distinction is necessary to preserve the traditional ontological disputes: for instance, between realism and nominalism, between dualism and materialism, and between theism and atheism. These are all disputes about whether we should have *extra* things in our ontology. In order to satisfy this *desideratum*, the ontologist should construct a binary distinction out of these various ontological questions. I would suggest the following: if a theory affirms some ontology predicate holds of the Fs but denies that others hold of the Fs, then the theory is *not* ontologically committed to Fs. That is, the *appearance* of a commitment to Fs has been defeated. If a theory says that there are Fs, but also that they don't exist, then the theory is not ontologically committed to Fs. After all, she says that they don't exist. As a result, I am inclined to accept the following Generalized Criterion of Ontological Commitment.

**General Criterion of Ontological Commitment (GCOC)** A theory is ontologically committed to Fs if and only if both of the following conditions obtain.

- (i) The theory includes a sentence which ascribes an ontology expression to Fs. That is, the theory says that there are Fs, or that Fs exist, or that Fs are entities...
- (ii) The theory fails to include the negation of one of these claims.

The generalized criterion will agree with Quine's criterion about any theory which applies every ontology expression to everything there is. In such a theory there is no way to drive a wedge between the ontological commitments of a theory and what it says there is. So, if it is trivial that everything exists, is an entity, and so on, then, for each theory that isn't trivially false, Quine's criterion will deliver the same ontological commitments as the generalized criterion.

This raises the possibility that a Quinean could derive an argument for Quine's criterion from the generalized criterion. If the Quinean has an argument that it is trivially false that there are things which do not exist, are not entities, and so forth, then Quine's criterion would be the correct way to extract the ontological of any theory that is not trivially false. Church (1958) and van Inwagen (2001b) attempt to offer arguments for roughly this position. If they are correct, then we should accept Quine's criterion.

Before I proceed, I should note that Kris McDaniel (2009, 2010) suggests an alternative to the generalized criterion: that we break the notion of ontology into pieces. We should talk of a theory's is-ontology, its existence-ontology, and its entity-ontology. These correspond to what it says there is, what it says exists, and what it says is an entity, respectively. Let us call this the Ways of Being view, following McDaniel's expression. I disagree with McDaniel's view, since it does not allow us to capture the binary distinctions which distinguish different ontological positions. It cannot distinguish platonism from nominalism, theism from atheism or physicalism from dualism.

McDaniel is forthright about this.

There is a perfectly natural quantifier that ranges over only concrete objects. So there is a very good sense in which there are no numbers. The sense of “there are” according to which there are both numbers and noses is less natural than the sense of “there are” according to which there are noses but no numbers. So nominalism seems vindicated. But there is also a perfectly natural sense of “there are” according to which there are numbers but no noses. So Pythagoreanism seems vindicated as well. This is somewhat puzzling.<sup>24</sup>

The parties to an ontological dispute such as the dispute between the nominalists and realists traditionally thought of themselves as arguing over a binary distinction. One should either believe in numbers or one should not. McDaniel says that a theory which asserts that there are numbers but that they are not entities would have numbers in its existence-ontology, but not in its entity-ontology. There is no such thing as the theory’s ontology *simpliciter*. This strikes me as problematic. It would be nice if one could ascribe a single ontology to a theory which says of number that they exist but are not entities, regardless of whether this theory is correct. The generalized criterion does just that.

Even though I believe that McDaniel is mistaken, our differences don’t matter here. If every legitimate or comprehensible ontology expression coincides with ‘is’, then McDaniel’s proposal will coincide with Quine’s criterion. However, if the ontology expressions deliver divergent answers for entities of

---

<sup>24</sup>McDaniel (2009), p. 315.

some category, then the two proposals will diverge. Thus, the Quinean can be taken as arguing that either the generalized criterion or the Ways of Being view collapse into Quine's criterion for every acceptable theory.

### 2.2.2.1 Reductionism

The generalized criterion of ontological commitment may seem strange at first glance. However, this impression might be lessened by considering the fact that it can be used to make sense of a familiar strategy in metaphysics, *reductionism*. The reductionist believes that some of the ontological commitments of a theory are merely apparent. The reductionist can be viewed as asserting that an apparent ontological commitment is defeated by other portions of her theory. Quine's criterion cannot make sense of this possibility. Each ontological commitment in a theory is due to the presence of a specific sentence in that theory. If a theory includes a sentence which says, for instance, that there are numbers, then there is nothing else the theorist can say to remove this commitment. The ontological commitments of a theory are *localized* to specific claims.

By way of contrast, the generalized criterion allows for the possibility of reduction. A theory which says that there are, say, numbers, but then denies that they are entities is not ontologically committed to numbers, even though it appears to be. This means that no single claim determines whether a theory incurs an ontological commitment. Even if the theory says that there are numbers, this ontological commitment may be *defeated*. Thus, when a

reductionist says that she is not ontologically committed to Fs but nevertheless is willing to assert that there are Fs, she should be interpreted as denying that some ontology expression holds of Fs. The generalized criterion makes sense of this possibility, because a theory's ontological commitments derive not only from the presence of specific sentences in a theory ('there are numbers') but also from the *absence* of other claims ('numbers are not entities'). For this reason, ontological commitment is a holistic property of theories if the generalized criterion is correct.

Reductionism has been an unpopular view recently. One reason is that some of the views about ontological commitment such as Quine's criterion have gained popularity. These views are all localist. According to them, there is nothing more to ontologically committing than asserting a claim of a certain kind. Thus, there is no difference between a theory which appears to have Fs in its ontology and one which genuinely does. As a result, these views are incompatible with most forms of reductionism.

### **2.3 Arguments from the Generalized Criterion to Quine's Criterion**

On my view, the Quinean presupposes something like the generalized criterion. She believes that she can trivially refute the view that there are things that don't exist, that there are things that aren't entities, that there are things that aren't real. She therefore believes that Quine's criterion will hold for every theory which is not trivially false. This result should be enough

to satisfy the Quinean.

Opponents of Quine's criterion typically offer counterexamples to undermine the claim that everything there is exists, or is an entity, or is real.<sup>25</sup> I hope to have provided a framework to make sense of these counterexamples. The examples attempt to show that Quine's criterion makes the wrong predictions about ontological commitment, based on a neutral criterion which Quine accepts. In what follows, I will explore this dialectic.

### 2.3.1 Being and Existence

Quine's criterion is commonly challenged by Meinongians and others who hold that there are things that don't exist. Sentences like (1) and (2) are alleged to be truths which are meant to establish the difference between 'exists' and 'is'.

- (1) There are characters described in *War and Peace* like Napoleon who exist, and others who don't.
- (2) There are characters described in *War and Peace* like Napoleon who *really* exist, and others who don't.

These examples are supposed to show that there are some things, characters, which do not exist. So the claim expressed by 'there are characters and they don't exist' would be not be trivially false, as the argument for Quine's criterion requires.

---

<sup>25</sup>This is the strategy, for instance, of Azzouni (2004).

The Quinean typically responds that these claims are in fact trivially false. For instance, van Inwagen (2001b) argues that Being and Existence are the same thing. To this end, he provides examples in which ‘there is’ and ‘there exists’ can be substituted *salva veritate*. He also provides examples in which it sounds very strange to say that there are things that do not exist:

Since I know of no way of arguing for the identity of being and existence (other than a case-by-case examination and refutation of all known attempts to give examples of non-existent objects), I shall have to try to find some means other than argument of persuading you to see things as I do. I will tell you a funny story. . . .

One day my friend Wyman told me that there was a passage on page 253 of volume IV of Meinong’s *Collected Works* in which Meinong admitted that his theory of objects was inconsistent. Four hours later, after considerable fruitless searching, I stamped into Wyman’s study and informed him with some heat that there was no such passage. “Ah,” said Wyman, “you’re wrong. There is such a passage. After all, you were looking for it: there is something you were looking for it. I think I can explain your error; although there is such a passage, it doesn’t exist. Your error lay in your failure to appreciate this distinction.” I was indignant.

My refusal to recognize a distinction between existence and being is simply my indignation, recollected in tranquility and generalized.<sup>26</sup>

This passage clearly is not intended to be a knock down argument against the view that there are things that don’t exist. But it does reproduce the core of the triviality argument. In many contexts, it simply *sounds wrong* to say there are things which do not exist, that there are nonexistent objects.

---

<sup>26</sup>van Inwagen (2001b), p. 16

What is one to make of this fact? This argument is hardly conclusive. Wyman's remarks might sound odd because in the cases considered it really is wrong to say that the object is but fails to exist. The proponent of this line of resistance will then add that it is only in van Inwagen's particular case that the distinction sounds funny. Consider the original examples of fictional characters. It sounded okay to say that there is a character described in *War and Peace*, Napoleon, who really existed, and there are others, such as Pierre, who didn't really exist.

An interesting fact is that Quine himself seemed to agree with this. In "On What There Is," his first temptation is to say that the Meinongian is simply talking nonsense, because Quine himself uses 'is' and 'exists' to mean the same thing.<sup>27</sup> However, he proceeds to point out that the word 'exist' has been "ruined" by philosophers who distinguish being and existence. Quine is conceding here that 'being' and 'existence' are in fact used differently in natural language, though he thinks that they shouldn't be. Quine's own response is to *abandon* the word 'exist'. Quine's preferred theory uses only the word 'is'. Given that Quine's is effectively conceding that ordinary speakers attempt to mark a distinction between 'being' and 'existence', the burden is on him to show that this distinction is illegitimate. He cannot merely charge his opponent with asserting something trivially false. Rather, Quine raises substantive considerations concerning identity to show that marking this distinction leads to an unlovely, "bloated" theory: his opponent's "slum of possibilities is a

---

<sup>27</sup>Quine (1999b), p. 3.

breeding ground for disorderly elements.”<sup>28</sup>

In other works, I think that Quine offers slightly more forceful considerations for rejecting the distinction between being and existence. Quine (1939) considers the possibility of holding that there are things that are unreal or do not exist. He worries, however, that these expressions do not mark useful distinctions; they are<sup>29</sup> “empty honorifics and perjoratives.” I think that Quine’s point is that once these notions are differentiated from that of being, they mark a distinction that we don’t understand. There are no experimental tests for existence and nonexistence and the distinction doesn’t play much of a role in our theories. Thus, it simplifies our theories and makes them less obscure if we don’t posit this distinction.

It is contentious whether this claim is actually true. It seems to me that the considerations which count as evidence that certain objects exist or don’t will depend on one’s background beliefs. Given a suitably enriched theory, the distinction could pay its way. I will not develop such a theory here. Rather, I will suggest that our ordinary practice does distinguish some ontology expressions from ‘there is’. Moreover, our ordinary practice provides guidance about how to apply this distinction.

---

<sup>28</sup>Quine (1999b), p. 4.

<sup>29</sup>p. 704.

### 2.3.1.1 Being and Being an Entity

I shall argue that there is at least one ontology expressions, ‘is an entity’, which can be sufficiently distinguished from ‘there is’ that it is not trivial that it applies to everything which there is. That is, I shall argue that it is not trivially false that there are things that are not entities.

Many philosophers have held that if a theory includes the claim expressed by the plural sentence ‘there are some people’, then the theory is ontologically committed to people, but needn’t be ontologically committed to anything further.<sup>30</sup> This sentences says that there are some things and *they* are people (or, perhaps, that each of them is a person). English is flexible and contains many predicates which can apply to some things taken together and not individually. This includes some seemingly singular predicates such as ‘is a family’ and ‘is a group’. Consider a sentence such as ‘there are some people and they are a family’.

There is good reason to suppose that this sentence does not ontologically commit to families, even if one supposes that the corresponding singular existence claim ‘there is something and it is a family’ does mark an ontological commitment to families. In particular, there is a natural way to express the fact that ‘there are some people and they are a family’ does not incur ontological commitments to anything over and above the members of the family. Though each person may be an entity, the people together are not an entity.

---

<sup>30</sup>This view is defended at length by Boolos (1998b).

At any rate, they are not a *single* entity. The people who are a family are not an entity either. They are multiple entities.

Admittedly, some philosophers might argue for deep semantic reasons that these plural quantifiers should be counted as ontologically committing. Importantly, these philosophers are not thinking about ontological commitment in the way the proponent of the (B) version of the triviality argument is. In particular, they are attempting to derive claims about ontological commitment from their view about the semantics of quantification. I will therefore postpone consideration of this sort of view.

One might worry that the fact that some people are not an entity is attributable to a general problem with sentences containing a plural subject but a singular predicate. van Inwagen (2001a), for instance, argues that singular predicates cannot be grammatically applied to plural subjects and that the identity sign cannot be flanked grammatically on one side by a singular term and on the other by a plural referring term. This seems obviously wrong to me. When some people are related genetically or by marriage, they become a family. (3) and (4) are some sentences which apply the predicate ‘is a family’ to the denotation of a plural term.

(3) We are a family.

(4) There are some people next door, they are a nice family.

These examples, I think, show that there is no general problem with sentences

containing a plural subject term, but a singular predicate noun.<sup>31</sup>

I believe that I have established that some people are not an entity. I will argue that it is also not trivially false that there is something which is not an entity. My reason for thinking that there is something which is not an entity, given that there are some things which are not an entity, derives from considering singular predicates like ‘is a family’. These terms can also occur following singular ‘there is’ claims. Thus, one can say,

(5) There are some people and they are a family in our neighborhood.

But one can also say,

(6) There is a family from our neighborhood.

It is natural to think of a term such as ‘a family’ as an indefinite description of the members of a family. Thus, the family mentioned in (6) just is the people

---

<sup>31</sup>One might perhaps suggest that the ‘are’ in (3) and (4) is what some philosophers have called the ‘are’ of constitution. On such a view the people are a family, but that the people do not have the property of being a family. The people are a ‘family’ perhaps in the sense that they *constitute* a family. As a joint semantic claim about the copula and about a failure of co-reference between ‘family’ and ‘the people’, these claims are refutable. The claim fails both coordination and anaphora tests. Consider for instance,

A The family next door is very nice. They respect each other.

B They are very supportive people and a nice family.

The second sentence in (A) contains a plural pronoun, ‘they’, which is anaphoric on the singular term, ‘the family’. On almost all theories of anaphora, this supports the conclusion that they co-refer. (B) is a coordination test to see if the ‘are’ ambiguous. The sentence seems perfectly acceptable to me, so the ‘are’ of ‘they are a family’ must be the same ‘are’ of ‘they are very supportive people’, thus refuting the semantic thesis. For more on this topic, see Pickel (2010).

who are in it. Those people are the family.

So here is the question: can one maintain both that the people are not an entity and that it's trivial that the family is an entity? In particular, can one reasonably hold that (7) and (8) are true, and that (9) is trivially true?

- (7) They are the family.
- (8) They are not an entity.
- (9) Each family is an entity

I don't think that this is a reasonable position. I don't see how anyone can plausibly maintain both that the people are not an entity but that the family they are is an entity. The family and the people in it are one and the same. So one can't be an entity if the other one is not. What's worse, the proponent of the (B) version must hold that this is trivially wrong. These considerations push me to believe that there are things are not entities. Families, groups and pluralities are not entities. Their members often are entities as individuals. If I am right about this, then the (B) version of the triviality argument fails.

## 2.4 The Semantic Argument

In the hands of some philosophers, debates about ontological commitment become debates about the semantics of the meaning of 'there is' in English. Certain philosophers argue that even though they believe that there are, say, properties, they are not ontologically committed to properties, since 'there is' in English – or in the relevant context – has a certain semantic profile. The

debate often focuses on whether ‘there is’ is an *objectual quantifier* or some other sort of quantifier. Very roughly, a quantifier such as ‘there is’ is *objectual* just in case the truth conditions of a sentence that contain it depend on a domain of extra-linguistic items which serve as possible interpretations for a variable. A quantifier is not objectual when its semantics can be specified in ways that do not depend on such a domain of items. Philosophers who wish to avoid ontological commitments are eager to show that their quantifiers are not objectual, because they concede that there is an argument from the claim that quantifiers are objectual to the claim that they are ontologically committing. In this section, I will examine this argument.

Quine himself often vacillates between offering something like the triviality argument and offering more semantically driven considerations. His argument is closer to the triviality argument when he suggests that he means the same thing by ‘is’ and ‘exists’. However, he often ventures into semantic considerations. In “On What There Is,” he famously formulates the principle<sup>32</sup> that “[t]o be assumed an entity is [...] to be reckoned as the value of a variable” and continues, “the variables of quantification [...] range over our whole ontology[.]” In later works, Quine more explicitly addresses the question of whether the semantics for quantification needs to be framed in terms of a domain of extra-linguistic items:

Suppose someone has for reasons of nominalism renounced most of mathematics and settled for bodies as the sole values of his variables.

---

<sup>32</sup>Quine (1999b), p. 13.

He can still do such part of arithmetic as requires no variables. In particular he can still subscribe to the nine-clause alternation “11 is prime or 12 is prime or 13 is prime or . . . or 19 is prime.” In this sense he agrees with us that there are primes between 10 and 20, but in the quantificational sense he denies that there are primes or numbers at all.<sup>33</sup>

Here, Quine purports to distinguish between two senses of the sentence ‘there are prime numbers between 10 and 20’. One may be asserted without marking an ontological commitment; the other marks an ontological commitment. A theorist may assert the sentence in this noncommittal way when she agrees to a disjunction of sentences of the form ‘a is an F’. Quine argues that the English ‘there is’ does not have this semantic profile. Rather, it is objectual and therefore is ontologically committing.

The semantic argument is supposed to take one from the fact that the English ‘there is’ is objectual to (Sufficiency), the claim that if a theory includes the sentence ‘there are Fs’, then it ontological commits to Fs. Thus, the argument seems to have the following form:

- (S1) All English uses of ‘there is’ are existential quantifiers with objectual semantics.
  - (S2) If an acceptable theory includes a sentence expressed by a sentence prefixed by an existential quantifier with objectual semantics, then it ontologically commits.
- ∴ (Sufficiency) Asserting a sentence prefixed by ‘there is’ is ontologically committing.

---

<sup>33</sup>Quine (1969a), p 99.

In what follows, I articulate more fully what it is for a quantifier to be objectual. I will then examine the connection between objectual quantification and ontological commitment. I will first consider and reject a bad interpretation of the semantic argument which has become relatively pervasive.

#### **2.4.1 What the Semantic Argument Is Not**

Unfortunately, the way that the semantic argument is often characterized disguises its force. The proponent of the bad version of the argument asks whether the disquotational truth conditions for sentences prefixed by an existential quantifier are acceptable. She asks whether a sentence such as ‘there are Fs’ is true if and only if there are Fs. Once this is granted, the proponent of the argument says that the sentence cannot be true unless, there are Fs. She then quickly concludes that anyone who accepts that the sentence is true is ontologically committed to Fs.

This is the version of the semantic argument that, for instance, Jody Azzouni puts forth in his (2004) and then promptly trounces. Azzouni suggests that any appearance of a link between the quantifiers and ontological commitment generated by this argument is deceptive. The temptation to say that ‘there is’-sentences are ontologically committing is supposed to derive from the fact that their semantic characterizations assert that they are true only if *there are* objects having certain features. In particular, ‘there are Fs’ is true only if there are Fs. But, Azzouni objects, this presupposes the link between objectual quantification and ontological commitment which it is supposed to

establish.

Objectual quantifiers have “objects” to range over only relative to a body of claims in a metalanguage that itself gains access to those “objects,” if at all, via what its own quantifiers range over. And if *those* (metalanguage) quantifiers do *not* carry ontological commitment, then neither do the objectual quantifiers that the metalanguage quantifiers help provide a semantics for. A slogan: *One can’t read ontological commitments from semantic conditions unless one has already smuggled into those semantic conditions the ontology one would like to read off.*<sup>34</sup>

Azzouni’s criticism is entirely right. The question of whether English quantification is ontologically committing can’t be decided by the disquotational truth condition, unless one already believes that English quantification is committing. In this example, the metalanguage and object language are the same: slightly regimented English. The only way for this argument to have any force, it seems, is if one presupposes that ‘there is’ sentences are ontologically committing.

But I am skeptical that this reconstruction of the argument is what Quine had in mind. Quine focuses on the alleged fact that English quantification is objectual and on the need for domains of quantification, as opposed to what is required by substitutional quantification. The only semantic feature of the quantifier used in the argument Azzouni attacks is the disquotational truth condition, that ‘there are Fs’ is true if and only if there are Fs. But this is a feature that even opponents of objectual quantification can accept

---

<sup>34</sup>Azzouni (2004), p. 55.

given a suitable metalanguage. For instance, the advocate of substitutional quantification can accept the disquotation principle if the set of names in the object language is the same as the set of names in the metalanguage. I shall, therefore, move to a better characterization of the semantic argument.

### **2.4.2 The Interesting Reading**

A satisfactory presentation of the semantic argument needs to argue for (S1) and (S2). That is, it needs to argue that ‘there is’ is an objectual quantifier and that sentences containing objectual quantifiers are ontologically committing. I first need to examine why someone might think that objectual quantification is ontologically committing in the first place. I will argue that there are two key features linking objectual quantification to ontological commitment. Firstly, the truth conditions for sentences pre-fixed by objectual quantifiers are specified relationally. Secondly, the truth-values for objectually quantified sentences are not determined by the truth-values of the atomics. This requires that objectually quantified sentences impose constraints on what is in the world that are not already present in the non-quantified portion of the language. I will argue that any satisfactory semantics for the English expression ‘there are’ must share this feature.

#### **2.4.2.1 On (S2)**

The standard Tarskian semantics for the quantifiers specifies the truth conditions for quantified sentences in terms of a relation between expressions

and the values in the world for which they stand. This is normally modeled as an interpretation function. The truth-values of sentences are relativized to these interpretation functions. The semantic clauses typically proceed as follows. For any atomic relation term,  $R$ , let  $\|R\|$  be the set of ordered n-tuples of objects which  $R$  is true of.

**Base Case** An atomic sentence ' $Rt_1, \dots, t_n$ ' is true relative to an interpretation  $\rho$ , if and only if  $\rho(t_1), \dots, \rho(t_n) \in \|R\|$ .

**Inductive Case ( $\wedge$ ):** ' $\Phi \wedge \Psi$ ' is true relative to  $\rho$  if and only if ' $\Phi$ ' is true relative to  $\rho$  and ' $\Psi$ ' is true relative to  $\rho$ .

**Inductive Case ( $\neg$ ):** ' $\neg\Phi$ ' is true relative to  $\rho$  if and only if ' $\Phi$ ' is not true relative to  $\rho$ .

Truth relative to an interpretation for quantified sentences is recursively defined as well. An existentially or universally quantified sentence is true if the variable bound by the quantifier is true for some interpretation or all interpretations of that variable, respectively. The formal characterization for the objectual quantifiers is (OB-E) and (OB-A).

**OB-E** ' $\exists x\Theta$ ' is true relative to an interpretation  $\rho$  if and only if for some interpretation function  $\rho^*$  differing from  $\rho$  only at its interpretation of 'x', ' $\Theta$ ' is true relative to  $\rho^*$ .

**OB-A** ' $\forall x\Theta$ ' is true relative to an interpretation  $\rho$  if and only if for every interpretation function  $\rho^*$  differing from  $\rho$  only at its interpretation of 'x', ' $\Theta$ ' is true relative to  $\rho^*$ .

The set of values of the variable 'x' in ' $\exists x\Theta$ ',  $\{y : \text{for some } \rho, y = \rho(x)\}$ , is the domain of the quantifier ' $\exists x$ '.

In a quantified language, the truth-values of various sentences are specified *relationally*; the truth values of these sentences depend on the behavior of the objects to which their components are related. That is, the semantics for the quantifiers invokes a word-world relation to specify the truth conditions of a quantified sentence.

It is therefore natural to say – all other things being equal – that one who sincerely endorses a sentence prefixed by an objectual existential quantifier, ‘ $\exists x\Theta(x)$ ’, thereby *believes in* an object which satisfies ‘ $\Theta(x)$ ’. Such a theorist, *prima facie* at least, posits an item in the domain which satisfies the open sentence ‘ $\Theta(x)$ ’. Thus, it is natural to think that the theorist *ontologically commits* to an item. Now, this line of reasoning is hardly decisive. But, it does create a great deal of pressure on agents to admit that their sentences prefixed by objectual existential quantifiers are ontologically committing.

Call a sentence containing a proper name ‘ $\Theta(\alpha)$ ’ witnesses a quantified sentence ‘ $\exists x\Theta(x)$ ’, if the sentence results from removing the quantifier and replacing the variable and the sentence is true. A philosopher might complain that she can offer a semantics for the sentences that witness a quantifier according to which the truth of sentence ‘ $\Theta(\alpha)$ ’ does not require that the singular term ‘ $\alpha$ ’ is related to any items in the world. Why should the quantified sentence ‘ $\exists x\Theta(x)$ ’ introduce new ontological commitments?

Here is an example. Some philosophers are intrigued by the fact that the truth conditions of sentences of the form ‘the number of F’s is n’ where ‘n’ is a numeral can be specified without treating the numerals as referring

to numbers. For instance, ‘the number of Fs is 0’ is true just in case nothing is an F; ‘the number of Fs is 1’ is true just in case there is an F and every F is identical to it; and so on. A philosopher, such as the nominalist Quine considers above, might take this to suggest that she can believe that ‘the number of Fs is n’ is true for any given ‘n’, and not ontologically commit to numbers. If that is true, why can’t she also believe that ‘there is a number such that it is the number of Fs’ ( $\exists x$  the number of Fs is x’) is true without thereby ontologically committing to numbers? That is, how can it be that the ontological commitments of a complex sentence *exceed* the ontological commitments of its simpler witnesses?

The proponent of objectual quantification has an answer to this question. If ‘ $\exists$ ’ is an objectual quantifier in the relevant language L, then the truth of a sentence which contains it, ‘ $\exists x\Theta(x)$ ’, is not determined by the truth-values of the simpler sentences in L that witness it. In general, the truth-values for quantified sentences are not determined by the truth-values of the atomic sentences. I mean by this that the distribution of truth-values for all sentences of the form ‘ $\Theta(\alpha)$ ’ does not *determine* the truth-value for ‘ $\exists x\Theta(x)$ ’. The fact that the distribution of truth-values for the atomic sentences in a language does not determine the truth-value of the quantified sentences follows from the fact that the truth-values for quantified sentences do not *supervene* on the truth-values of the atomic atomic sentences in the language. To see this consider speakers in two possible worlds. In one world, there is an unnamed planet on the other side of the universe. In the other world, there is no such

planet. The two speakers use the same language. Even if the atomic sentences in this language have the same truth-values in the different possible worlds, that does not guarantee that the quantified sentences will as well. The sentence ‘there are unnamed planets’ will have different truth-values in the two possible worlds.

The fact that the truth-values of quantified sentences are not determined by the truth-values of the atomic sentences matters because the truth conditions of objectually quantified sentences do not just reiterate the commitments of the non-quantified portion of the language. Even if the apparent singular term, ‘ $\alpha$ ’, is not given a relational semantics as it occurs in the atomic sentence ‘ $\Theta(\alpha)$ ’, this does not entail that the quantified sentence ‘ $\exists x\Theta(x)$ ’ is not given a relational semantics. The truth-value for ‘ $\exists x\Theta(x)$ ’ will depend on something further. So, the fact that the truth-values of the quantified sentences are not determined by the truth values of the atomic sentences means that the truth-value of a quantified sentence ‘ $\exists x\Theta(x)$ ’ depends on something further.

### 2.4.3 On (S1)

The reason the Quinean argues English quantifiers are objectual is that she needs to establish that the truth conditions for the quantified sentences are not determined by the truth conditions of the atomic sentences. Rather, they depend also on the existence of items in a domain whose extent is not determined by the language. As we saw in the last section, this supervenience

failure is a key, though not decisive, indicator that the existential quantifiers introduce ontological commitments.

The standard argument for (S1) rests on the absence of alternatives to analyses upon which the English idioms of quantification are objectual, and therefore non-supervenient. The Quinean must establish, therefore, that all theories according to which English quantificational idioms are not objectual are false. In particular, she needs to refute all views according to which the truth conditions of the existential quantifiers supervene on the truth-values of the non-quantified sentences.

There is one standard non-objectual treatment of the English idioms of quantification according to which the truth conditions of the quantified statements do supervene on the truth conditions of the atomic sentences: the substitutional account of quantification. Quine criticizes substitutional analyses in “Existence and Quantification.” I shall argue that the substance of Quine’s criticism of this analysis of English quantification is correct. The criticism will lead me to discuss various alternative formulations of substitutional semantics. I will argue that these alternatives fail to guarantee that the truth-values of complex sentences are determined by the truth-values of the simpler sentences. Thus, the truth-values of the quantified sentences cannot be shown to be determined by the commitments of the atomic sentences.

Substitutional semantics for quantification link the truth conditions of quantified sentences with their having witnesses. On a substitutional semantics, an existentially quantified sentence is true if and only if it has a witness. A

universally quantified sentence is true if every witness is true. More precisely,

**SQ-E**  $\lceil \exists x\theta(x) \rceil$  is true if and only if for some term<sup>35</sup>  $\lceil \alpha \rceil$  in the set of terms in the language which can be grammatically substituted into  $\lceil \theta(\dots) \rceil$ , the sentence  $\lceil \theta(\alpha) \rceil$  is true.

**SQ-A**  $\lceil \forall x\theta(x) \rceil$  is true if and only if for any term  $\lceil \alpha \rceil$  in the set of terms in the language which can be grammatically substituted into  $\lceil \theta(\dots) \rceil$ , the sentence  $\lceil \theta(\alpha) \rceil$  is true.

Unlike the semantics for objectual quantification, the truth-values for sentences containing quantifiers governed by (SQ-E) and (SQ-A) do supervene on the truth-values of the non-quantified sentences of the language. It is therefore open to the advocate of substitutional quantification to hold that the truth-values of the atomic sentences *determine* the truth-values of the quantified sentences.

One plausible consequence of this is that sentences containing these quantifiers incur no more commitments than would be acquired using the quantifier free sentences. While sentences containing objectual quantifiers are true or false in virtue of a word-world connection via the interpretation function which made no difference to the quantifier free portion of the language, substitutional quantifiers are entirely parasitic on the word-world relations of the sentences which witness them. Since the terms don't need ranges of values to which they are reinterpreted, the advocate of substitutional quantification

---

<sup>35</sup>I am here using term to mean any expression which the advocate of substitutional quantification thinks can be expressed by a variable of quantification. The most common strategies limit terms to nouns and general terms.

need not view terms in positions which are accessible to quantification as referential.

Now to the important question: does the substitutional analysis fit the English quantificational expression ‘there is’? The example I mentioned above conclusively shows that the substitutional analysis given by (SQ-A) and (SQ-E) cannot be the right analysis of English quantification.<sup>36</sup> Consider sentence (10).

(10) There is an unnamed star.

This sentence is true, if there is an unnamed star. Now, all sentences of the form ‘ $\alpha$  is a star without a name’, where ‘ $\alpha$ ’ is a name in the object language, are false, since no star with a name in the object language is unnamed. So according to (SQ-E), this statement is false. But this is, of course, the wrong prediction. There clearly are unnamed stars, and the sentence ‘there are unnamed stars’ is true. So substitutional semantics fails to capture the truth conditions for even relatively simple sentences.<sup>37</sup>

I take this example to decisively refute the naive substitutional semantics I offered above. There have been attempts to save the substitutional quantifier by making it sensitive to the existence of unnamed items and similarities not marked by predicates. I shall discuss two of these. Although I have

---

<sup>36</sup>See Quine (1986), pp. 91-94.

<sup>37</sup>I should note that the problem is not generated by merely by the presence of the metalinguistic predicate ‘unnamed’. It can be generated for any case in which we think that the range of objects in the world exceeds the range of names in the language.

nothing against these as semantic proposals for English, I shall argue that they fail to achieve the purpose that the substitutional quantifier was built to serve: ontological reduction. That is, the truth conditions for sentences containing these quantifiers, as much as those of sentences containing the objectual ones, fail to supervene on the truth-values of the quantifier free sentences. As a result, the image of a domain of potentially unnamed, language-independent items stands, and Quine can build his case for (Sufficiency).

One attempt to save a substitutional account of quantification appeals to possible expansions of the set of terms. The idea is that one could in principle introduce a name for every item in the domain and every similarity could be marked by a predicate. So if we want the substitutional quantifier to be sensitive to unnamed items and unnoticed similarities, why not let the substitution class for a term include not only actually existing names, but also any name which could be introduced consistently with the rules of the language and the facts? I shall call these substitutional quantifiers, the expansive substitutional quantifiers. The advocate of a substitutional system might suggest something like (SQ2-E) and (SQ2-A) as their semantic characterizations of the substitutional quantifiers.<sup>38</sup>

---

<sup>38</sup>Bonevac (1984) adopts a more full blooded version of this sort of substitutional semantics in which truth in the object language depends not only on possible expansions of the names in the language, but also on possible expansions of the model simpliciter, including its domain and the extensions of its predicates and relations. This is a bit odd, because the domain of quantification we are considering is the whole world, so these extensions of the domain must be, as it were, outside of the world – or merely possible. Bonevac calls his semantics substitutional, but it seems to me that Bonevac’s semantics is not substitutional. It is really objectual, but intended not to be ontologically committing. The domain of possible

**SQ2-E**  $\lceil \exists x\theta(x) \rceil$  is true if and only if for some term,  $\alpha$ , in the set of constants in the language or in the set of possible extensions of the constants and interpretation function on those constants can be grammatically substituted into  $\theta(\dots)$ , the sentence  $\lceil \theta(\alpha) \rceil$  is true.

**SQ2-A**  $\lceil \exists x\theta(x) \rceil$  is true if and only if for all terms,  $\alpha$ , in the set of constants in the language or in the set of possible extensions of the constants and interpretation function on those constants can be grammatically substituted into  $\theta(\dots)$ , the sentence  $\lceil \theta(\alpha) \rceil$  is true.

The expansive substitutional semantics avoids the difficulty mentioned above of the naive (SQ-A) and (SQ-E).<sup>39</sup>

Even if these are adequate semantic axioms for English quantification, they do not achieve their purposes of showing that the ontological commitments of quantified sentences do not exceed the ontological commitments of the atomic sentences. The key feature of the objectual semantics is that the truth conditions for quantified statements fail to supervene on the truth-values of our atomic sentences and our linguistic practices. By making her substitutional semantics adequate as an analysis of English, the advocate of this substitutional semantics has given up any plausible claim to such supervenience. She has given up any plausibility to the claim that the quantifiers do not forge a word-world connection not already present in the non-quantified portion of the language.

---

extensions of one's model is a fact external to non-quantified features of one's language.

<sup>39</sup>As I said, it assumes that every item the kind of thing that can be referred to, and every similarity can be marked by a predicate. I should note that this is a controversial assumption. Perhaps there are items out there which cannot be referred to. Perhaps, we are just incapable of referring to certain things with our existing linguistic rules.

Let me explain. The truth conditions of sentences prefixed by an expansive substitutional quantifier are sensitive to (A) the truth-values of the atomic sentences, (B) the totality of possible names that can be introduced, and (C) the truth-values of the sentences which could be introduced using these names. In order for the truth conditions for the expansive substitutional quantifier to supervene on the truth-values of the atomic sentences and the linguistic practice, (A), (B) and (C) must supervene on the truth-values of the atomics and on the linguistic practice. But (B) fails to so supervene on the truth-values of the atomics for precisely the reasons that the truth conditions for sentences prefixed by objectual quantifiers fail to supervene.

The totality of names which could be introduced is clearly constrained by rules of the linguistic practice. There are certain procedures for introducing names and predicates. The question then is whether the totality of names which could be introduced supervenes on the truth-values of the actual atomic sentences and the linguistic practices. Could there be a person who had all of the same actual names and predicates that I do, who agreed with me about the truth-values of the actual atomics and who had the same rules for introducing names and predicates that I do, but who, nonetheless, could introduce a different set of proper names and predicates than I could? The answer is obviously that there could be such a person. All we have to do is imagine a person in circumstances like mine as far as the atomic sentences and the rules of the language go, but surrounded by a different totality, or domain, of objects. Because this person is surrounded by different objects, her linguistic

rules allow her to introduce names from the ones I can introduce. Unless one thinks that the language already determines a range of possible interpretations for new names and predicates, then the language's symbol stock and rules underdetermine which names can be successfully added to it and which sentences containing these names are true.

Thus, this substitutional semantics seems to be in exactly the same boat as the objectual semantics as far as the semantic argument goes. The advocate of an expansive substitutional semantics must posit a domain of objects out there in the world apt to be referred to, just as the advocate of an objectual semantics must.

Thomas Hofweber has offered a similar proposal. Hofweber is not himself advocating the view that all quantification is substitutional, but he seems to think that English quantification sometimes requires a substitutional semantics. Hofweber's proposal is supposed to wholly eliminate "ineffable" properties, so that every natural language has the resources to express the content of a sentence of any other language. He suggests that the advocate of substitutional quantification should change their semantic axioms from (SQ-A) and (SQ-E) so as to allow context sensitive expressions like indexicals to be witnesses to the quantification. Further, the truth clauses should be relativized to contexts of utterance.<sup>40</sup> So Hofweber's suggestion would turn the characterization of the substitutional quantifier into (SQC-A) and (SQC-E).

---

<sup>40</sup>Hofweber (2006).

**SQC-E**  $\lceil \exists x\theta(x) \rceil$  is true if and only if for some context C and some term  $\alpha$  in the set of terms in the language which can be grammatically substituted into  $\theta(\dots)$ , the sentence  $\lceil \theta(\alpha) \rceil$  as uttered in C would be true.

**SQC-A**  $\lceil \forall x\theta(x) \rceil$  is true if and only if for any context C and any term  $\alpha$  in the set of terms in the language which can be grammatically substituted into  $\theta(\dots)$ , the sentence  $\lceil \theta(\alpha) \rceil$  as uttered in C would be true.

This strategy seems to fail if introduced for the purposes of eliminating ontology for exactly the same reason that the expansive substitutional quantifier does. Someone could agree with me as far as (a) the truth-values of the atomic sentences and (b) the rules for using indexical expressions in context, and yet the truth-conditions of the contextual substitutionally quantified sentence would differ from my own. This is because the totality of things which they could refer to by the demonstrative expressions in their situation would differ from the totality of things which I could refer to.

Thus, it seems to me that any adequate substitutional semantics will suffer from the same supervenience failure that the objectual semantics does. So it is in the same boat as the objectual semantics with respect to the my reconstruction of the semantic argument.

#### 2.4.4 The Constraints on Reduction in Ontology

The failure of substitutional semantics shows that one cannot reduce one's ontology in a way that makes the existence of the items in one's domain of quantification counterfactually depend on features of the language. The truth-value of a quantified sentence is not determined by the truth-values

of the atomic sentences, but by something else: specifically, the features of the items in its (extra-linguistic) domain of quantification. When a theory asserts a sentence prefixed by an objectual existential quantifier, the theory commits to the existence of something *in the world beyond the language* making true the quantification. This seems to suggest that any theory including a claim prefixed by an objectual existential quantifier *prima facie* ontologically commits to items of the relevant sort. Because objectually quantified sentences require the existence of worldly items, Quine is right that one can't admit that there is an item, and then the next minute add that it is not in one's ontology without further qualification.

However, this does not show that everyone who sincerely asserts a sentence prefixed by an objectual existential quantifier incurs an ontological commitment. To put the point less favorably to Quine, the fact that English quantification is objectual entails that one who asserts that there are Fs can't avoid ontological commitments to Fs in ways that make the following sorts of counterfactual conditional true: if the language had been different, then whether there was an F might have been different. To make the same point once more, the domain of quantification can't be dependent, except in trivial cases, on the actual features of the language.

However, nothing prevents the ontologist who doesn't want Fs in her ontology from positing that certain portions of the domain of quantification, the Fs, are determined to exist by the other portions of the domain. This ontologist would then be in a position to argue that the Fs are *nothing over*

*and above the Gs.* That the facts about the Fs are determined by the facts about the Gs is not a sufficient condition to claim that the Fs are nothing over and above the Gs, but is a necessary condition.

Let us consider a case. Consider the philosopher who asserts ‘there are families’. The truth of this sentence depends on whether there is an item in the domain to which ‘family’ applies. However, this theorist needn’t merely accept that she is ontologically committed to families. She must first argue that the facts about families are grounded in facts about some underlying entities. In the case of families, facts about them are determined by facts about their members. She must then differentiate families from other entities which are determined to exist. She may do this in the way we considered above. She may say, for instance, that though there are families, they are not entities or are not real. If our theorist agrees to all of this, then there is no reason to take her to be ontologically committed to families.

## **2.5 Conclusion**

I hope to have established that both the triviality and semantic arguments fail to establish (Sufficiency). However, I also hope to have shown that there is pressure on anyone who thinks that there are Fs but denies that they are in her ontology to give substance to her position. In particular, her theory must differentiate Fs from the other things she believes there are. She must say, for instance, that Fs are not entities, that they do not exist, or that they are not real. I have argued that these positions are intelligible, though they

require a substantive background theory. Moreover, she must argue that the facts about Fs are determined by some underlying facts.

I therefore believe that we don't have any decisive reason to accept Quine's criterion. There are coherent alternatives to Quine's criterion. Moreover, some of these alternative positions such as the general criterion introduced above make room for reductionist views in metaphysics by denying that an ontological commitment can be localized to a single claim. In the next chapter, I will begin an argument purporting to show that this is a decisive reason to replace Quine's criterion. That is, I will argue that some account of reduction is essential to defend the coherence of the ontological project.

## Chapter 3

### Carnap's Ontological Conventionalism

“I fear your principle of tolerance may finally lead you even to tolerate Hitler.” – Quine to Carnap<sup>1</sup>

*Ontological disputes* have the following form. An ontologist picks out a class of items – numbers, gods, sets, tropes, external objects or what have you – and asks whether there *really* are these items. Should one *believe in* these things? A dispute erupts between those who say, “yes, there really are numbers [gods, sets, tropes, external objects]” and those who say, “No, there aren't really any such things.” The former *believe in* numbers, the latter don't.

Parties to these disputes think that they are theoretical and cognitive. That is, they think that there are features of the world which determine who is right in the dispute. Further, ontologists think that some of these features are scrutable. At least some ontological disputes are resolvable using the epistemic resource available to an ordinary human being.

Throughout his career, and culminating in “Empiricism, Semantics, Ontology” (ESO), Carnap argued that the world does not set a standard determining who is correct in an ontological dispute. The parties to an ontologi-

---

<sup>1</sup>Creath (1990), p. 241

cal dispute are debating over an issue which is devoid of “cognitive content.”<sup>2</sup> Anyone who is a realist about ontological disputes – one who thinks that the world sets a standard determining who is correct and that this standard is sometimes scrutable – must at some point address Carnap’s challenge.

Carnap’s argument that the world does not set a standard determining who is correct in an ontological dispute can appear deceptively simple. It appeals to his famous distinction between *internal* and *external* questions. Any theoretical dispute is supposed to be resolvable by answering enough internal or external questions. Carnap argues that the correct position in an ontological dispute cannot be resolved by answering legitimate, truth-evaluable questions of either sort.

Unfortunately, the exact nature of this crucial distinction is opaque. The arguments that neither internal nor external questions resolve ontological disputes are muddled, and it is difficult to see where Carnap and a realist disagree. Further, Carnap and Quine agree that the arguments are somehow bound up with the existence of a nontrivial analytic-synthetic distinction and the “dogma of reductionism,” but it’s difficult to see how the distinction between internal and external relies on these two dogmas. In the course of this chapter, I will attempt to illuminate the distinction between internal and external questions. I will then attempt to reconstruct Carnap’s arguments that ontological disputes cannot be resolved by answering questions of either sort.

---

<sup>2</sup>Carnap (1988a), p. 209.

This will require making explicit the extent to which these arguments rely on the “two dogmas of empiricism.” I will suggest that a version of this argument can survive Quine’s attacks on the two dogmas.<sup>3</sup> I will argue that Carnap’s argument constitutes an unmet challenge to the dominant, broadly Quinean, conception of ontology. I will conclude by suggesting that Carnap’s position has an advantage over some more recent attempts to develop a skeptical view of ontology including those proposed by Eli Hirsch.

### 3.1 Internal and the External Questions

In this section, I develop an account of the distinction between internal and external questions. The claims expressed by (1) as used by a mathematician, (2) as used by a physicist and (3) as used by the person on the street would answer internal questions.

- (1) There are prime numbers.
- (2) There are hydrogen atoms in the sun.
- (3) There are chairs in the room

In order to assert these claims, the theorist must presuppose a system of background linguistic rules and justificatory procedures, or what Carnap calls a *framework*. In investigating whether there are prime numbers, whether there are hydrogen atoms in the sun, or whether there are chairs in the room, one

---

<sup>3</sup> Quine (1999e), Quine (1976a) and Quine (1976b).

accepts certain sorts of sentences as well-formed and meaningful, and one accepts certain sorts of reasoning as establishing that a sentence is true. I will call claims which can answer internal questions *internal claims*. They are of the sort which could compose an ordinary or scientific theory.<sup>4</sup>

Carnap contrasts questions which are internal to a given framework with questions which are external to the framework. These questions do not presuppose the linguistic rules and justificatory procedures of that framework. Carnap is not entirely clear in (ESO) about the range of external questions one may ask. He explicitly mentions two sorts of external question. Ontological questions are one sort of purportedly external question. These questions, Carnap says, “must be raised and answered *before* the introduction of the new forms of language”; that is, before the internal questions can be asked.<sup>5</sup> Because they are supposed to be answered before a new form of language and the justificatory procedures are even introduced, Carnap believes that ontological questions are illegitimate. They have not been given “cognitive content.” Carnap’s point is that it is hard to make sense of a dispute as being cog-

---

<sup>4</sup>I want to stay neutral for now about whether the procedures of justification are – as Carnap would think – specified by the linguistic rules. However, it should be clear that the justificatory procedures one uses have something to do with the meanings of one’s sentences. If two theorists disagree about the circumstances under which they would be justified in including a sentence in their theories, then this provides some evidence that the two theorists mean different things by that sentence. Further, it is hard to take seriously the idea of a theorist who claims that a sentence is meaningful, but who has no idea how to figure out whether it is true. One final relationship between the the linguistic rules and the justificatory procedures is that one cannot even consider whether including a claim in one’s theory would be justified until one understands linguistic rules enabling one to consider that claim.

<sup>5</sup>Carnap (1988a), p. 214.

nitive if its participants don't presuppose any linguistic rules or justificatory procedures. If ontological disputes concern how to answer external questions without presupposing any framework at all, as Carnap believes, it's hard to see how anyone could have a theoretical justification for preferring one side to the other.

The only other external questions which Carnap mentions explicitly are pragmatic questions about whether to adopt linguistic and justificatory rules. Answers to these questions cannot be evaluated for truth or falsity, but "can only be judged as being more or less expedient, fruitful, conducive for which the aim for which the language is intended."<sup>6</sup> Carnap makes a similar remark in *The Logical Syntax*, §78 suggesting that philosophers are liable to confuse assertions made in a language with suggestions as to which language to adopt.<sup>7</sup>

Some philosophers have inferred that no external questions are theoretical or have truth-evaluable answers.<sup>8</sup> I think this conclusion is mistaken. Carnap's distinction between internal questions and external is very close to a distinction he makes in *The Logical Syntax*. There he distinguishes between object-claims and others. The object-claims correspond to internal claims of (ESO). These are claims asked from within a particular language. Carnap divides the other claims into two sub-kinds. There are metalinguistic claims,

---

<sup>6</sup>Carnap (1988a), p. 214.

<sup>7</sup>Carnap (2002), p. 299.

<sup>8</sup>This is the interpretation offered in Eklund (2009).

or – as Carnap prefers to put it – claims in the *formal mode*. On the other hand, there are “pseudo-object” claims framed in the *material mode*. These claims appear to be expressed in the vocabulary of some object-language or framework, or in the *material mode*. However, they are not assigned truth or verification conditions by the object language.<sup>9</sup> Carnap thinks that the majority of claims made by philosophers are of this third sort.

Metalinguistic questions ask about a language. For instance, one can ask questions about what sentences would come out true, if one were to accept a given framework. In asking this question one *mentions* but does not *use* the sentences from the framework at issue. Such questions have answers which can be evaluated for truth and falsity. But at the same time, one need not presuppose the framework under consideration in order to ask them. These metalinguistic questions legitimately inquire about a theory T expressed in framework F. They may be asked without presupposing framework F, but rather some other framework F\*.

When Carnap grasps for some external questions which they might be asking, he considers asking the nominalists and platonists whether they are concerned with the hypothetical question, “whether the framework of numbers, *if* we were to accept it, would be found to be empty or not.”<sup>10</sup> Carnap has the ontologists deny that they are disputing about how to answer this question. All parties to the dispute can agree on the answer to this question. This

---

<sup>9</sup>Carnap (2002), pp. 284-288, §74.

<sup>10</sup>Carnap (1988a), p. 209.

question, of course, does not presuppose the framework of numbers. In the context of the *Logical Syntax*, Carnap asks these questions from the framework of a purportedly neutral syntax language.

In contrast to metalinguistic sentences, Carnap's pseudo-object sentences are asked in the material mode. I think that the phenomena he intends to pick out can best be described using Quine's famous example sentences: 'Gorgione was so-called because of his size' and 'Barbarelli was so-called because of his size'.<sup>11</sup> In these sentences 'Gorgione' and 'Barbarelli' appear to occur in the material mode. Yet, the sentences do not have the same truth-value despite the fact that Giorgione is Barbarelli. Quine therefore supposes that 'Giorgione' in the first sentence disguises a term which refers in some way to a metalinguistic item, and not merely Giorgione the man.

Such constructions are liable to cause confusion, but it would be a mistake to think that they are universally illegitimate. Carnap wants to circumscribe the class of uses of pseudo-object sentences. He believes that such uses are legitimate only when one can provide linguistic rules and justificatory rules for them. Most often, this will involve translating them into metalinguistic sentences.<sup>12</sup> When these translations are available, the pseudo-object sentences are legitimate.

However, the fact that pseudo-object statements make use of the vocabulary of a framework to which they don't belong gives them the potential to

---

<sup>11</sup>These examples are discussed in (1999c).

<sup>12</sup>Carnap (2002), pp. 312-315, §81.

mislead one into thinking that they pertain to the same entities which genuine object statements do. As Carnap says in the *Logical Syntax*,

The habit of formulating in the material mode of speech causes us, in the first place, to deceive ourselves about the objects of our own investigations: pseudo-object sentences mislead us into thinking that we are dealing with extra-linguistic objects such as numbers, things, properties, experiences, states of affairs, space, time, and so in; and the fact that, in reality, it is a case of language and its connections ... is disguised from us by the material mode of speech.<sup>13</sup>

Thus, when no such rules are available, pseudo-object sentences may still appear to have content, though in fact they have no proper meaning and are mere confusions.

Carnap's distinction between internal and external sentences roughly corresponds to his distinction between object sentences and others in *Logical Syntax*, §72-80.<sup>14</sup> Metaphysical questions, Carnap thinks, are among the pseudo-object questions which are detached from linguistic or justificatory rules. If this is right, then Carnap's argument that ontological disputes cannot be resolved by answering external question must be divided in two. He must show that ontological disputes cannot be resolved by answering questions which are external to any framework. As I mentioned, I believe that he does so satisfactorily in ESO. One doesn't have to be a rabid verificationist to question whether a dispute which for which no procedures of justification can be specified is really a legitimate theoretical dispute.

---

<sup>13</sup>Carnap (2002) p. 298-299, §78.

<sup>14</sup>Carnap (2002)

But Carnap must also show that ontological disputes cannot be resolved by legitimate, truth-evaluable external questions. This argument is missing from ESO. But, Carnap could easily provide one, given the way that he thinks about these questions. They are questions about a framework which cannot be resolved in that framework. Rather, they are asked from the point of view of a different framework. If ontological disputes concerning say, numbers, can't be resolved within their own framework – that is, by theorizing about numbers, they would need to be answered by questions from another framework. But what framework could be relevant to whether there really are numbers other than the number-framework? As I mentioned, Carnap briefly wonders whether ontological questions are metalinguistic questions about what follows from the number framework, but quickly rejects this possibility on the ground that the ontologists do not take themselves to be disputing about this question.<sup>15</sup> It would seem, then, that the ontologists must be disputing over something without presupposing any linguistic rules or justificatory procedures.

If this is right, then Carnap has a good reason to suppose that ontological questions cannot be resolved by answering legitimate external questions. But now the crucial question emerges: why does Carnap think that ontological disputes are unlike other theoretical disputes? Why does he think that ordinary and scientific theories, which are composed of internal claims, cannot resolve ontological disputes? In the next section, I will develop a traditional account according to which internal claims – claims endorsed in the course of

---

<sup>15</sup>Carnap (1988a), p. 209.

ordinary and scientific theorizing – do resolve ontological disputes. I shall then examine what I take to be Carnap’s argument against the view.

### 3.2 The Theoretical Conception of Ontology

There is a tradition in philosophy which includes Aristotle, Aquinas, Descartes and Quine according to which philosophy and science are continuous. According to the members of this tradition, the parties to an ontological dispute are arguing about what the right theory of the world is. Thus the standards for settling an ontological dispute are derivative on the standards for settling on a correct theory of the world. Ontological disputes are to be resolved by a two step process.<sup>16</sup> One first selects a “good” theory of the world, a theory which one has reason to endorse. The theory must be good in two respects. It must be wholly true. If a theory has false claims, then one shouldn’t endorse it.

It is not sufficient for a theory to be wholly true, however. The empty theory (which includes no claims about the world) is a wholly true theory, after all. A theory which fails to describe important features of the world is worse than a theory which captures all of the world’s contours. The former theory is less *comprehensive* than the latter. One example which is frequently cited in the literature is a theory which neglects to mention things over a light year away.<sup>17</sup> This theory is “astronomically impoverished.” It fails to

---

<sup>16</sup>Compare Chihara (1973), p. 87.

<sup>17</sup>I take this example from Dorr (2005).

say enough. It is not a comprehensive description of reality. The theory does not, so to speak, describe all of the states of affairs.<sup>18</sup> Scientists themselves often consider whether the electro-magnetic theory or quantum mechanics as it currently stands is capable of describing the whole of reality in this way.<sup>19</sup> I take it that they mean to ask whether the resources deployed in the current theory could in principle be used to completely describe the universe and “leave nothing out.” I shall call theories which succeed in this requirement, *adequate*.

After one finds a good theory, one then must figure out what that theory’s ontology is. If gods, numbers sets or tropes are in the ontology of the good theory, then they are in the world’s ontology. The correct ontology just is the ontology of a good – true and adequate – theory. I will call this view, *the theoretical conception of ontology*. Alberto Coffa puts this view as follows.

Before Carnap, it was widely assumed that there is a very intimate link between some of the things we say and ontology. To put it in its most convincing form, the idea was that whenever we endorse statements involving talk about numbers or propositions or electrons or chairs, we must, in all consistency, agree that among the things in the universe there are numbers or propositions or electrons or chairs.<sup>20</sup>

Ontology as a discipline is just an extension of the kind of theorizing done by scientists. Thus, the members of the tradition would think that ontological

---

<sup>18</sup>I do not mean to commit to a metaphysics of states of affairs by this remark.

<sup>19</sup>A discussion of this can be found in Maudlin (2006).

<sup>20</sup>Coffa (1993) p. 234.

questions are in fact resolved by answering enough “internal questions.” In rejecting the view that ontological disputes can be resolved by answering enough internal questions, Carnap is rejecting the majority position in ontology.

### 3.2.1 Using Theories to Resolve Ontological Disputes

The correct ontology is the ontology of a true and adequate theory. Therefore, in order to use a theory T to resolve an ontological dispute, one must first determine whether it is true and adequate. One must then determine what its ontology is. To put the issue more conventionally, one must apply a *criterion of ontological commitment* to T.

Whether a theorist ontologically commits to, say, Fs depends on the claims she explicitly endorses. But the claims explicitly endorsed are not enough to determine her ontological commitments. Often a theorist learns that her theory has more in its ontology than she expected, because the theory has a logical consequence of which she had not taken notice. This suggests that both the claims a theorist is explicitly willing to assert and their logical consequences matter for determining a theory’s ontology. For that reason, I shall treat theories as sets of claims closed under logical consequence.

The most common procedure for evaluating the ontological commitments of a theory is given by Quine’s criterion of ontological commitment. According to Quine, ontological disputes concern what there is. A theory’s ontological commitments are given by what it says there is.<sup>21</sup> Thus, a theory

---

<sup>21</sup>“We can very easily involve ourselves in ontological commitments by saying, for example,

ontologically commits to, say, numbers if and only if it includes the claim that there are numbers. A theory ontologically commits to universals if and only if it includes the claim that there are universals. More generally, a theory ontologically commits to Fs if and only if it includes the claim that there are Fs.

Carnap explicitly considers the result of applying Quine's criterion of ontological commitment to theories. According to Carnap's terminology, a theory which says that there are Fs accepts Fs as entities.

The acceptance of a new kind of entities is represented in the language by the introduction of a framework of new forms of expressions to be used according to a new set of rules. There may be new names for particular entities of the kind in question; but some such names may already occur in the language before the introduction of a new framework. . . . The two essential steps are . . . the following. First, the introduction of a general term, a predicate of higher level, for the new kind of entities, permitting us to say of any particular that it belongs to this kind.<sup>22</sup> Second the introduction of variables of the new type. The new entities are the values of these variables[.]<sup>23</sup>

However, Carnap does not believe that one can determine the right ontology by selecting a true and adequate theory of the world and determining which system of entities it accepts. Insofar as Carnap has an argument that internal

---

that there is something (bound variable) which red houses and sunsets have in common; or that there is something which is a prime number larger than a million. But this is, essentially, the only way we can involve ourselves in ontological commitments: by our use of bound variables." Quine (1999b), p. 12.

<sup>22</sup>Parentetical removed.

<sup>23</sup>Carnap (1988a), pp. 213- 214.

questions cannot resolve ontological disputes, he must be thinking of something along the line's of Quine's criterion. I will develop this argument in the next section.

For now, I want to observe two important facts about Quine's criterion. The first is that according to Quine's criterion, ontological differences between theories are *ubiquitous*. It is very easy for two theories to differ in their ontological commitments. One reason is that 'there are' claims are frequent in theories. It is very easy in the course of ordinary and scientific theorizing to assert 'there are' claims. Thus, ordinary and scientific theories are likely to be up to their necks in ontological commitments.

Another reason ontological disagreements are ubiquitous according to Quine's criterion is that in order for two theories to have the same commitments they must exhibit a high degree of hyperintensional agreement. A theory ontologically commits to Fs just in case it includes the claim that there are Fs. But whether a given sentence says that there are Fs is a hyperintensional matter. Two sentences may be equivalent, indeed necessarily equivalent, and yet say different things. For instance, Church (1958) pointed out that a theory may include the claim that there are unicorns without also including the claim that there are trolls, even though (necessarily) all and only unicorns are trolls. A theory which is ontologically committed to unicorns need not be ontologically committed to trolls even though the unicorns are the trolls. This means that in order for two sentences to generate the same ontological commitment, they must share their hyperintensional features.

This conforms with Carnap's description of accepting a new system of entities. Carnap says that accepting Fs as entities depends on whether one asserts a sentence concatenating 'there is' with a "new predicate" picking out the Fs. This means that whether a theory accepts Fs as entities depends on the *syntactic structure* of the sentences used to assert the claims of the theory. But, a sentence's syntactic structure is a hyperintensional feature of that sentence, in that two sentences could be necessarily or even *a priori* equivalent and yet differ in their structures. As a result, even necessary and *a priori* equivalent sentences may differ in their ontological commitments.

The other fact about Quine's criterion of ontological commitment that I want to flag is that it is *localist*. Whether a theory has an ontological commitment to Fs depends on whether the theory includes one specific claim. Namely, the theory must include the claim that there are Fs. Once the theory includes this claim it is committed to Fs regardless of what else it says. As a result, it almost never happens that two theories share *all* of their ontological commitments.

### 3.3 Carnap's Argument

Carnap rejects the theoretical conception of ontology. In particular, he rejects the view that one can resolve an ontological dispute by selecting a correct theory and determining which "system of entities" it accepts. Carnap's rejection of this picture emerges quite clearly in the *Aufbau* where in §52, he says,

The realistic language, which the empirical sciences generally use, and the constructional language actually have the same meaning: they are both neutral as far as the decision of the metaphysical problem of reality between realism and idealism is concerned. It must be admitted that, in practice, linguistic realism, which is very useful in the empirical sciences, is frequently extended to a metaphysical realism; but this is a transgression of the boundary of science.<sup>24</sup>

The selection of a theory of the world, Carnap thinks, does not resolve the ontological dispute between realism and idealism. Even though a scientific theory is “linguistically realist” and asserts the existence of various external physical objects, this does not constitute evidence in favor of realism about physical objects. Even if science delivers a theory couched in a “linguistically idealist” language, one cannot infer that idealism is the correct ontological position. I will first consider and reject a bad way to interpret Carnap’s argument. I will then explain how I understand Carnap’s argument and why it still poses a problem for anyone who endorses the theoretical conception.

### **3.3.1 The Triviality of Internal Questions**

Burgess (2008b) has suggested that Carnap thought ontological questions are not resolved by answering internal questions, because the latter are too easy to answer.<sup>25</sup> On this view, Carnap is arguing that it is very easy to resolve the question of whether one should adopt a theory which says that there are numbers, physical objects, gods and so on. It is very easy to determine

---

<sup>24</sup>Carnap (2003), p. 86.

<sup>25</sup>This seems to be the view defended in Eklund (2009) as well.

whether to accept a system of entities. Ontologists do not think that it is easy to resolve their disputes. Therefore, one cannot resolve ontological disputes by selecting a theory. Burgess compares his interpretation of Carnap to an argument Crispin Wright (1983) offers favor of platonism. Burgess presents this argument as follows.

I have as many fingers as toes; but as everyone who understands the concept “number” knows, to say that I have as many fingers as toes is equivalent to saying that the number of my fingers equals the number of my toes; but to say this presupposes that there is such a thing as the number of my fingers or toes; hence the number ten exists. What the Carnapian agrees with in this argument is the recognition that concepts come with rules for their employment, some of which entail affirmative answers to certain existence questions, so that one has only two choices: either one rejects the concept, in which case the existence questions cannot even be asked; or else one accepts the concept, in which case one immediately gets affirmative answers to those existence questions. One cannot ask the question and answer it in the negative.<sup>26</sup>

Burgess seems to have the Carnapian argue that it is too easy to determine whether one should put the claim expressed by ‘there are numbers’ in one’s theory. It would therefore be too easy, according to Quine’s criterion of ontological commitment, to resolve the ontological dispute between platonists and nominalists in favor of platonism. One is therefore supposed to conclude that this was not in fact what was under dispute.

---

<sup>26</sup>Burgess (2008b), pp. 60-61.

Carnap sometimes sounds as though he is making this argument. For instance, he says that internal questions about numbers such as ‘there are prime numbers’ are “rather trivial.”<sup>27</sup> One might suppose that he means to argue that since ‘there are prime numbers’ comes out trivially true given the framework of numbers, the dispute between nominalists and platonists would be trivially resolvable. The fact that the nominalists and platonists don’t take their dispute to be trivial to resolve would then be evidence that they don’t take their dispute to be resolved by answers to internal questions.

I am skeptical that this is the best way to interpret Carnap. Carnap repeatedly insists that which framework one accepts is a matter of choice. It is this aspect of his position which differentiates him from someone who merely thought that ontological disputes were easy to resolve. For instance, according to Carnap, a realistic language has no theoretical advantages over a phenomenistic language, it is only more practically useful. It is because of this that Carnap does not count as a realist about physical objects. What differentiates Carnap from a platonist such as Crispin Wright is that he thinks that from a theoretical point of view nominalist theories are just as good as realist theories. It is supposed to be *optional* whether one accepts the framework of numbers. The nominalists aren’t doing anything wrong by not using number language. This is one of the most striking features of Carnap’s philosophy: the choice between frameworks is a matter of convention and

---

<sup>27</sup>Carnap (1988a), p. 209.

therefore there are multiple equally good theories of the world.<sup>28</sup>

Burgess seems to recognize this aspect of Carnap's philosophy.

One is compelled to accept certain existence assertions, if one accepts the concept, or the "framework" to substitute Carnap's term for Wright's. One is not, however, compelled to accept every concept that might be proposed. . . . [T]he Carnapian view would be that it is a mistake to attempt to enforce the acceptance of concepts by a priori arguments.<sup>29</sup>

Thus, Carnap's whole case against the theoretical conception of ontology seems to rest on the fact that the choice between frameworks and, therefore, theories is conventional. In order to do justice to Carnap's view here, one must show that the choice between a nominalist theory and a platonist theory – or between a phenomenalist theory and a realist theory – is informed by only practical and not theoretical considerations. There must be no advantage to either theory. The trouble that I have with Burgess' interpretation is that he does

---

<sup>28</sup>My reading of Carnap appears to be in tension with some things which he says. For instance, "In the case of this particular example, there is usually no deliberate choice because we all have accepted the thing language early in our lives as a matter of course. Nevertheless, we may regard it as a matter of decision in this sense: we are free to choose to continue using the thing language or not; in the latter case we could restrict ourselves to a language of sense-data and other "phenomenal" entities, or construct an alternative to the customary thing language with another structure, or, finally, we could refrain from speaking." Carnap (1988a) (p. 207). I take it, however, that Carnap does not mean to put phenomenalist-idealist and alternative frameworks on par with declining to speak at all. A theory couched in one of these frameworks, Carnap seems to think, can fulfill all of the purposes of science, whereas surely refraining to speak does not fulfill these purposes. These alternative frameworks are "not poorer" (to borrow Carnap's vocabulary, Carnap (1988b), p. 156.) than the physical object framework. Refraining from theorizing at all would produce a poorer framework, or so it seems to me.

<sup>29</sup>Burgess (2008b), pp. 60-61. Carnap, of course, thinks that one cannot be compelled to accept a framework by a priori or *empirical* arguments.

not articulate the sense in which the choice of frameworks is optional, and thus fails to distinguish Carnap from a platonist such as Wright. Once one recognizes that it is the conventionality of frameworks that does the heavy lifting, the triviality of internal claims seems like an idle wheel. In the next section, I will attempt to articulate Carnap's reason for thinking that which framework one adopts is a matter of convention.

### 3.4 Tolerance and Ontological Underdetermination

As I read Carnap, he argues that one cannot resolve an ontological dispute by selecting a correct theory of the world and determining which "system of entities" it accepts because there are many equally correct theories of the world which accept different systems of entities. Carnap calls this position the *Principle of Tolerance*. According to Carnap, the nominalist and realist theories are equally good and comprehensive descriptions of the world. Yet, they accept different entities. Since the theories are equally good, the choice between using one rather than the other is a matter of *convention*. Since there is nothing more to accepting a system of entities than accepting a theory, the choice between endorsing numbers as entities and not doing so is also conventional.

We may still speak (and have done so) of "the acceptance of the new entities" since this form of speech is customary; but one must keep in mind that this phrase does not mean for us anything more than

acceptance of the new framework, i.e. of the new linguistic forms.<sup>30</sup>

Carnap could have put this better. The acceptance of a system of entities involves not only adopting a framework, but also endorsing a theory within this framework. One may, for example, endorse the framework of physical things, but mistakenly believe that there is no way to coherently project physical objects out of one's elementary experiences using the rules suggested in the *Aufbau*. Such a theorist would reject a theory which "accepted" physical entities. Nevertheless, there remains a conventional element to the adoption of a system of entities. There are equally good theories in different frameworks which accept different entities.

Thus, I read Carnap's argument against the theoretical conception of ontology as follows. Suppose the theoretical conception of ontology is correct; the correct ontology is the ontology of a correct theory. Then we cannot have two correct theories with different ontologies. If there were such theories, then the world's ontology would be problematically underdetermined. The world would not determine who was correct in an ontological dispute. As Coffa describes the situation before Carnap,

Short of reduction, all parties agreed that it was irresponsible to talk a language with ontic commitments one could not accept and that it was *incoherent* to promote the acceptance and use of languages with conflicting ontic commitments.<sup>31</sup>

---

<sup>30</sup>Carnap (1988a), pp. 213- 214.

<sup>31</sup>Coffa (1993) p. 234.

According to my reading, Carnap thinks that he can show that there is more than one equally good theory of the world and concludes from this that accepting some entities is not the same thing as ontologically committing to them. The right set of ontological commitments is supposed to be absolute, not relative to one's framework. There is supposed to be a correct answer to which ontology is right.

But, one can only ask whether a theory accepts a given system of entities. There is no further fact of the matter about the system of entities being the right system of entities, since there are equally good theories with different ontological commitments. Thus, Carnap thinks that the question of which system of entities are accepted by any good theory cannot be the subject of the ontologists' disputes.

A similar line of argument has also been endorsed by Hilary Putnam.

[An] idea that I defended in "Realism and Reason" is that all situations have many different correct descriptions, and that even descriptions that, taken holistically, convey the same information differ in what they take to be "objects"; this was part of my case against the idea of a Totality of All Objects.<sup>32</sup>

Putnam thinks that there are multiple equally good theories of the world and that this is a threat to the view that the world settles on a unique ontology.<sup>33</sup> Putnam concludes from this that multiple equally good theories can differ in

---

<sup>32</sup>Putnam (1994a), p. 45.

<sup>33</sup>See for instance Putnam (1983a).

their ontologies. There is no “theory independent totality of all objects,” as he puts it. So in a sense, Putnam accepts that ontological disputes are resolved by one’s theory. He differs from an advocate of the theoretical conception of ontology, because he thinks that ontological disputes receive only theory-relative (or better: framework-relative) resolutions. By way of contrast, Carnap thinks that the fact that there are many equally good theories shows that ontologists can’t have been arguing about which system of entities to accept.

### **3.4.1 Carnap’s Argument for Tolerance**

To review my interpretation: in order to establish that there is nothing in the world determining who is correct in an ontological dispute, Carnap needs to establish that the theoretical conception of ontology is false. The theoretical conception says that ontological disputes are resolved by finding a true and adequate theory of the world and extracting its ontology. Carnap is trying to refute this view by exhibiting two “equally good” theories which differ in their ontologies. In the context of refuting what I call the theoretical conception, two theories will be “equally good” if they are both true and adequate. That is, both theories say only true things and both theories say enough.

The analytic-synthetic distinction and verificationism make their only appearance in the course of arguing for the claim that there are two equally good theories which differ in their ontologies. Let us consider one of Carnap’s examples. He thinks that a platonist theory (which includes the claim that

there are numbers) and a nominalist theory (which lacks this claim) are both equally good theories of the world. In order to do this, Carnap needs to establish that both theories are wholly true and that both theories are adequate, that they say enough. Finally, he needs to argue that the theories accept different systems of entities.

In order to establish that both the platonist and nominalist theories are true, Carnap appeals to verificationism. Nothing more is required for the claims to be true, according to Carnap, than that their verification conditions are satisfied. As Carnap presents them, the platonist and nominalist theories agree on all of their claims except for certain mathematical claims which the nominalist theory simply omits.<sup>34</sup> Because of his verificationism, the only thing Carnap needs to show in order to argue that these claims are true is that their verification conditions are satisfied. The verification conditions for the mathematical claims are that they are derivable using certain proof rules laid down in the *Logical Syntax*.<sup>35</sup> The relevant mathematical claims – such as the claim that there are numbers – do in fact follow from the proof rules, so no one who accepts Carnap’s verificationism can contest that these sentences are true. Analogous considerations hold for the difference between an idealist and a realist language. Once one accepts that the verification conditions obtain

---

<sup>34</sup>Carnap’s mathematical language uses sorted variables, thus the language in which his nominalist theory is expressed cannot even state that there are numbers.

<sup>35</sup>There are actually some complications here when one considers stronger mathematical claims such as those expressible in Carnap’s Language II in his Carnap (2002). For simplicity, I will restrict my attention to the basic mathematical claims in Carnap’s constructivist language I.

and that there is nothing more for the sentence to be true than that they obtain, one must immediately infer that the sentences are true.

Carnap still needs to establish that the two theories are both adequate. He does make claims along these lines. For instance, he says that a phenomenalist framework is “not poorer” than a realist framework.<sup>36</sup> But arguments for this position seem to be lacking. It looks as though the nominalist theory simply leaves out claims contained in the platonist theory and that Carnap has nothing to say to make up for these omissions. A casual reading of (ESO) would give this impression. For instance, Matti Eklund pushes Carnap on this point as follows.

But if the condition of equal expressive resourcefulness is properly imposed, then Carnap, if he is an ontological pluralist at all, is a blundering ontological pluralist. When, in (1950), he considers a nominalist language, he conceives of it as lacking even the means to talk about numbers. He certainly gives the impression that as soon as we introduce the means to talk about numbers into a language, that language will be such that the sentence “numbers exist” ... is true there. The concept of number is such that “numbers exist” is analytic in a language where we can talk about numbers. ... But if so, then Carnap’s nominalist language will not be one where “numbers exist” ... comes out false, for it does not even contain a counterpart of this sentence. It is hard not to get the impression that the language of Carnap’s nominalist simply is expressively impoverished, in something like the way that Dorr’s astronomically impoverished language is. For the language is, so to speak, strictly less resourceful than the platonist language Carnap describes. The platonist language is the nominalist language plus the framework of

---

<sup>36</sup>Carnap (1988b), p. 156.

numbers – the ability to speak of numbers – added to it.<sup>37</sup>

Eklund wants to know what differentiates the nominalist theory from a palpably inadequate theory such as the theory which fails to describe objects more than a lightyear away. He seems to think that Carnap has nothing to say about this issue, since it is lacking from (ESO).

Now whether one likes what Carnap has to say about expressive adequacy, it's not as though he never thought about the issue. In particular, the notion of adequacy makes its appearance in connection with the thesis of physicalism and in the debate over protocol sentences. Carnap (1959) argues that the final language of science will be a *universal* language. He gives two characterizations of what he means by this.<sup>38</sup> Speaking in the formal mode, this means that every sentence of every language has to be translatable into the language of the final science.<sup>39</sup> Speaking in the material mode, the physical language describes every state of affairs. Of course, this shouldn't be taken as an endorsement of a metaphysics of states of affairs. Speaking of states of affairs is, for Carnap, merely a way to state in the material mode what is better put as a fact about which sentences are inter-translatable.

Let's focus on the notion of 'translation'. Carnap is very explicit that

---

<sup>37</sup>Eklund (2009), p. 141.

<sup>38</sup>I am here following Uebel (2007).

<sup>39</sup>In Carnap (1959), he explicitly says that every protocol, or basic sentence of any language, must be translatable. But it's not a far jump from this to the stronger thesis. See pp. 166-167.

translation requires only epistemic equivalence.<sup>40</sup> A sentence P translates a sentence Q if and only if “every protocol [or epistemically basic] sentence which confirms P also confirms Q and *vice-versa*.” Carnap changes his mind quite frequently about how to formulate the notion of a translation, and we could get far afield discussing the topic.<sup>41</sup> Nevertheless, all of Carnap’s formulations agree that the notion of a translation is to be defined in terms of some sort of epistemic equivalence.

I should secure against one potential objection. Carnap thinks that every psychological claim is “translatable” into a sentence in the physical theory. It does not follow that the purely physical theory and the union of the physical and psychological theories share their ontologies, or “accept the same entities.” The ontology of a theory is determined by fine-grained features. Whether a theory T has Fs in its ontology is sensitive to whether it asserts claims of a certain form, namely that there are Fs. One way to put this is that the ontology of a theory, construed as a set of sentences, is sensitive to the sub-sentential structure of the claims it contains. Alternatively, the ontology of a theory, construed as a set of propositions, is sensitive to the “hyperintensional” or structural features of these propositions.<sup>42</sup> For instance, Carnap says in (ESO) that the introduction of new entities requires that one’s theory be expressed using new predicates and variables. Whether a sentence contains

---

<sup>40</sup>Carnap (1959), p. 166.

<sup>41</sup>See Carnap (1987) and Carnap (1936) for some of the revisions Carnap makes to his notion of adequacy. Uebel (2007) has a good description of the dialectical situation.

<sup>42</sup>Hawthorne (2009) discusses the connection between ontological commitment and hyperintensionality.

certain predicates or variables is a matter of its structure.

The features which determine whether two theories are “translatable” are more coarse-grained than the features in terms of which their ontologies are assessed. Two sentences are translatable for Carnap when they have the same verification conditions. The criterion of translation is not sensitive to the sub-sentential features of a sentence or the hyperintensional features of a propositions. The translatability of a physical claim P into another claim Q required by Carnap’s version of physicalism does not guarantee that P and Q accept the same system of entities. The sentences may have the same epistemic profile, but deploy different predicates and variables. They would thereby accept different systems of entities. Epistemic equivalence is not enough to guarantee that the sentences have the same content, even by Carnap’s own standard. For example, they needn’t be “intensionally isomorphic.”<sup>43</sup> Thus, the best physical theory needn’t have the same ontology as, say, an idealist theory, even if the two theories are epistemically equivalent.

According to Carnap, the thesis of physicalism requires that the final physical theory be adequate. No theory can describe any more states of affairs (have stronger verification conditions) than the final physical theory. Thus, once the thesis of final physics is formulated one needn’t add any further claim to it; for example, the states of affairs described by psychological claims are already described in the physical theory. Therefore, the dogma that the con-

---

<sup>43</sup>Carnap (1988b), pp. 56-59.

tent of a claim cannot exceed the content of experience reports which verify it makes its appearance in order to secure the claim that the two theories are adequate. The physical theory and the psychological theory are verified by the same protocol sentences.<sup>44</sup> To return to the equivalence between nominalism and platonism, Carnap should say that the nominalist needn't adopt the platonist's claims because the empirical content of the platonist theory is the same as the empirical content of the nominalists' theory.

### 3.4.2 Tolerance without the Dogmas

Even though Carnap has an argument for the view that there can be more than one true and adequate theory of the world, one might reasonably believe that it is compromised by its reliance on the analytic-synthetic distinction and the dogma of reductionism. How much of Carnap's argument is threatened if one abandons the dogmas? As I reconstruct it, the only component of Carnap's argument that is threatened is his argument for the principle of tolerance. Carnap's argument for the truth of the claims of arithmetic relies on the position that they are analytic. The argument for the truth of the claims about physical objects relies on the position there is nothing more for them to be true than that they can be consistently posited given one's experiences in accordance with certain rules. If one gives up verificationism, then Carnap's argument for the truth of these claims collapses. Alternatively,

---

<sup>44</sup>I am here using *protocol sentences* as sentences which are external to the theories under consideration. An equivalent formulation – according to Carnap – can be stated without this assumption. See Carnap (1987).

one might attack the view that any two theories are empirically equivalent, or that empirical equivalence is a good criterion of adequacy.

Can Carnap's larger argument against ontology survive abandoning the two dogmas? Carnap would need to show that there could be more than one true and adequate theory without appealing to the analytic-synthetic distinction or the dogma of reductionism. It is seldom realized how much better Carnap's dialectical position is than his opponents. For he needs to prove only that there can be at least two true and adequate theories of the world which accept different systems of entities, whereas they need to prove that there cannot be.

I will now offer an example which supports the claim that there is more than one true and adequate theory of the world. I will suggest that speakers in English and German are likely to produce different theories which can nevertheless be true and adequate. The case I will consider will seem rather trivial. One might think that the differences in these theories cannot lead to differences in their ontologies. However, one must keep in mind that Quine's criterion predicts that almost any two theories differ in their ontologies. Thus, the desire to reject the ontological consequences of this sort is just a reaction against Quine's criterion of ontological commitment.

### **3.5 Tolerance and Other Natural Languages**

Consider the fact that there are structural differences between English and other natural languages such as German. This can be illustrated by the

fact that sentence (4) is entailed by sentences (5) and also entailed by sentence (6).

(4) There are things on other things

(5) The clock is on the wall.

(6) The cup is on the table.

A theory which includes (4) is ontologically committed to things on other things. Thus, English speakers who use prepositions in a standard way will inevitably be ontologically committed to things which are on other things. Monolingual German speakers will likely not share this ontological commitment. German differs from English in that the word ‘on’ translates into ‘an’ in German as it occurs in (5) but into ‘auf’ as it occurs in (6).

(4\*) (a) Es gibt Dinge an anderen Dingen.

(b) Es gibt Dinge auf anderen Dingen.

(5\*) Die Uhr ist an der Wand.

(6\*) Die Tasse ist auf dem Tisch.

(4) can be translated as either of two distinct German sentences, (4\*a) and (4\*b).

Germans have a discipline which they call ‘Ontologie’ or ‘Metaphysik’ which plays roughly the role that the discipline English speakers call ‘ontology’ or ‘metaphysics’ plays. I’ll assume for now that these are the same discipline. The Germans evaluate the ontological commitments of a theory expressed

in their language by looking for the ‘es gibt’ claims. Looking at the theory expressed by (4\*a) and (4\*b), the German will suggest that there are two ontological commitments, while the English speaker will find only one. Thus the ontology of the English speaking theorist and that of the German speaking theorist appear to differ.

I believe that it is very difficult to deny that either English sentence (4) or that German sentences (4\*a) and (4\*b) are true. Does this mean that English or German theories are inadequate? I think not. This case just seems different from that of the tribe which refuse to theorize about objects greater than a light year away. Both the German and English speaker seem to be able to offer exhaustive descriptions of situations in which things are on other things. The norms of inquiry do not require an English speaker to supplement her theory with sentences containing the words ‘auf’ and ‘an’. She would be required to supplement her theory if she left out the pertinent astronomical or chemical facts. The English and German speakers seem capable of specifying the relative distances between objects, the angles of contact and so on. I see no reason to suppose that the mere difference in prepositions constitutes evidence that the English theory or German theory violates a norm on theorizing. Though I cannot rule out this option conclusively in this chapter, it seems to me that the theory expressed in English and the theory expressed in German are capable of being adequate. These issues are discussed again in chapter 6.

### 3.5.1 The Same Theory Response

One may avoid endorsing (Tolerance) by holding that an adequate version of the theory expressed in English will inevitably be the same as an adequate theory expressed in German. This strategy would be plausible if one could hold that ‘on’ is ambiguous in English. If it were, then (4) would be ambiguous. Each disambiguation would correspond to one of (4\*a) and (4\*b). To see that ‘on’ is used univocally in (5) and (6) however, consider the fact that it can be coordinated, as in:

(7) You spilled beer on the wall and the table.

Coordination is a good but defeasible test for univocality. This strongly suggests that (4) is not ambiguous and expresses a different proposition from either of (4\*a) or (4\*b).

I mentioned that the English theory and the German theory will inevitably say more about the relative locations of objects such as the clock and the table. This raises the possibility that English contains a sentences expressing propositions with the same truth conditions as (4\*a) and (4\*b) and that there might even be English sentences which express the *same proposition* as the German sentences. The complete English theory would therefore include the propositions expressed by the German sentences.

This strategy, however, runs into the problem of structure. The bearers of ontological assessment must be *structured*. Thus, propositions are structured, if they are the bearers of ontological assessment. Even if there is an

English sentence with the same truth conditions as (4\*a), this sentences will be highly complex and gerrymandered whereas the German sentence is relatively simple. Therefore, the proposition expressed by the English sentence and the proposition expressed by the German sentence likewise differ in structure.

### **3.5.2 A Comparison with the views of Eli Hirsch**

The above argument presupposes that the structures of the natural language sentences are reflected in the structures of the propositions that they express. In particular, I presupposed that the fact that the English and German sentences have different structures is evidence that they express different propositions. I believe that this assumption is licensed by the fact the bearers of ontological commitment must be structured on Quine's criterion. There must be a distinction between the existential, or 'there are', claims and those that are not existential or ontologically committing. I assumed that the structure of a sentence in natural language can be taken as a guide to its ontological commitments, because I believe (A) that no natural language is better suited to ontology than others and (B) that natural languages (which incorporate sufficient scientific vocabulary) are suitable for ontology.

One might challenge these assumptions. One might argue that sentences with different structures can express the same proposition, and that therefore at most one of these sentences reflects the structure of this proposition. As a result, some languages are privileged with respect to ontological commitment. On, this view, there might be an English sentence – however

complex – which expresses the same proposition as, say, (4\*a), but which has a different structure. Only one of these sentences has a structure which reveals its ontological commitments. So on this view, either English or German is unsuitable for the purposes of ontology, or both languages are.

Eli Hirsch – a philosopher often compared to Carnap – holds that some natural languages are more suitable than others to the purposes of ontology. Hirsch thinks that there are many possible languages in which the sentences asserted by ontologists come out true. Hirsch takes this to mean that the only issue between ontologists is what comes out true in their own language. For example, Hirsch describes a dispute between Roderick Chisholm and David Lewis concerning how objects persist. He suggests that the only issue is what comes out true in English.

My claim is that all of Chisholm’s accepted sentences are true in RC-English, and all of Lewis’s accepted sentences are true in DL-English, so that the only real issue is which, if either, of these languages corresponds to plain English.<sup>45</sup>

For Hirsch, ontology amounts to an examination of which ‘there is’ sentences come out true in English.

This view seems to have the curious result that the discipline that English speakers call ‘ontology’ is different from the discipline from the practice that German’s call ‘Ontologie’. Carnap argues that using different languages will lead one to construct equally good theories which differ in their ontologies.

---

<sup>45</sup>Hirsch (2005), p. 75.

He does not think that ontology can be relativized to accommodate this fact, and therefore rejects the practice. Hirsch, on the other hand, thinks that ontology – the project we English speakers call ‘ontology’ – requires assessing which ‘there are’ claims come out true in English. German speakers practice a project they call ‘Ontologie’ are simply engaged in different projects.

I prefer Carnap’s interpretation of the situation. Neurath, complaining that Heidegger’s theories can only be appreciated by theorists speaking languages structurally similar to German, says,

Einstein’s theories are expressible (somehow) in the language of the Bantus – but not those of Heidegger, unless the linguistic abuses to which the German language lends itself are introduced into Bantu.<sup>46</sup>

Neurath’s complaint is that Heidegger’s theories compare unfavorably to scientific theories since they are not translatable into alternative languages. Neurath, of course, tries to extend this criticism to all of metaphysics. If metaphysics is worth doing, and I believe it is, then it must be able to resist Neurath’s criticism. Unfortunately, if we take Hirsch’s conceptions of metaphysics seriously, then metaphysics cannot offer this response, and so probably should not survive.

Another version of this strategy would not have the problematic result that English is privileged over German for the project of ontology or *vice-versa*. Philosophers such as Ted Sider and Cian Dorr have recently defended the view

---

<sup>46</sup>Neurath (1959), p. 200.

that ontology requires constructing a language that is privileged in this way.<sup>47</sup> According to them, ontological disputes are to be resolved by theorizing in a special, or ideal, language. The right ontology is the ontology of a good theory in this language. I address this view in fuller detail in the next chapter. For now, I will merely note that the assumption amounts to a rejection of the view that ontology is continuous with ordinary and scientific theorizing. Ontology, on this view, is an independent science, subject to its own norms. This is a view that Carnap, and many ontologists, are unable to accept.

### 3.6 Conclusion

I hope to have shown that Carnap's argument survives the collapse of the analytic-synthetic distinction and puts serious pressure on any advocate of the theoretical conception of ontology. As I see it, there are only three serious options for resisting Carnap's conclusion. One option is to dig in one's heels and insist that – despite appearances – there can be at most one true and adequate theory. In my view, the most plausible version of this strategy is the one which Matti Eklund has recently called *maximalism*, according to which a theory must include all truths to be adequate. I will discuss this option in chapter 6. The second option is to reject Quine's criterion and to replace it with a criterion of ontological commitment which is either not localist or not ubiquitous. Two theories would thereby be able to contain different claims without thereby differing in their ontologies. I have attempted to develop a

---

<sup>47</sup>See Dorr (2005) and Sider (2009).

version of this strategy in the previous chapter. The third option is to argue that ontology requires formulating a theory in a special, or ideal, language along the lines suggested by Sider and Dorr. I will address these proposals in the next chapter.

## Chapter 4

### Against Ideal Language Ontology

Some philosophers prefer desert landscapes. According to these philosophers, the world contains fewer kinds of things than ordinary and scientific theories would suggest. Though there is no consensus – even among these sparse ontologists – concerning what the contents of the world are, they have been known to hold that such things as tables, numbers, selves, complex objects, and sets are not really there. They don't belong in our *ontology*. Yet, ordinary and scientific theories clearly entail that there are such things. An ordinary speaker is likely to assert, say, that there are a number of lovely tables in the next room, and this cannot be true unless there are tables. Similarly, biological theories will say that there were highly complex organisms in the ocean millions of years ago. Thus, these theories entail that there are some complex objects.

According to one dominant view, in order to reconcile one's theory with one's ontological views one must replace the sentences in one's theory that entail the existence of the problematic objects with other sentences with no such entailments. For instance, Peter van Inwagen, who denies the existence of tables, has suggested replacing the sentence 'there are tables' with

the sentence ‘there are things arranged table-wise’ in the final theory of the world.<sup>1</sup> But, how does this replacement procedure reconcile one’s theory with one’s ontology?

One tradition – issuing largely from Quine – says that these replacements amount to a genuine change in one’s theory analogous to a scientific development. One replaces, or *paraphrases*, a sentence one believes to be literally false by a sentence one believes to be true.<sup>2</sup> The paraphrase should capture what was useful in the original statement, but needn’t preserve anything more. There is no principled difference between van Inwagen’s proposal to paraphrase the sentence ‘there are tables’ and a Copernican’s proposal to paraphrase the sentence ‘the sun is rising’ with the sentence ‘the Earth is rotating’, or even a witch-skeptic’s proposal to paraphrase ‘a number of witches were burned’ with the sentence ‘a number of women were burned’.

However, there is another tradition which is seeing a resurgence, most prominently, in the works of Ted Sider (2009), but also in the works of other philosophers such as Ross Cameron (2009b) and Cian Dorr (2005). According to the philosophers in this tradition, the claim with problematic entailments is not false. Rather, it suffers from some other defect: the original sentence does not faithfully represent the reality that makes it true. In one’s final theory of the world, it must be replaced with – or analyzed by – a sentence that does

---

<sup>1</sup>van Inwagen (1990).

<sup>2</sup>van Inwagen (1990) (chapters 9-11) presents himself as following Quine. However, this is not entirely clear, since he thinks that the content of an ordinary assertion of ‘there are tables’ is true.

faithfully represent the reality that makes it true. A language composed of such sentences would be logically perfect or ideal. I will call this view *the ideal language method in ontology*.

The ideal language method in ontology has a prominent place in the history of analytic philosophy, because it was powerfully articulated by Russell in *The Philosophy of Logical Atomism* (PLA). Though the general contours of Russell's position are well-known,<sup>3</sup> some of the details need to be reexamined in light of the renewed attention paid to the ideal language method. In this chapter, I show that Russell vacillates about how analysis is supposed to reconcile one's metaphysics with one's theory. I will argue that this reflects a deep instability in the ideal language method. In particular, the ontological import of paraphrasing sentences into an ideal language must be articulated. However, once these implications are made explicit, the paraphrase procedure is no longer required to bring one's theory and preferred ontology into harmony. I will then consider more recent attempts to describe the ontological upshot of the ideal language method and argue that they render the translation procedure unnecessary for similar reasons. I will conclude with a new proposal explaining the value of paraphrasing sentences with unwanted ontological commitments into sentences without those commitments.

---

<sup>3</sup>Early commentators include Stebbing (1932), Urmson (1971), and Wisdom (1931). More recent commentators, often focussing on Russell's transition from his early views, include Sainsbury (1979), Hylton (1990) and Makin (2000).

## 4.1 The Ideal Language Method in Russell

In PLA, Russell suggests that he will defend the radical thesis that there are no people, desks, numbers or classes. They<sup>4</sup> are “extruded from the world of what there is.” However, Russell often retreats from this extreme position to a kind of *agnosticism*:<sup>5</sup> “[I] am not denying the existence of anything; I am only refusing to affirm it.” At first glance, the thesis that there are such things as desks has nothing to do with language. Moreover, Russell’s reasons for being an agnostic are thoroughly nonlinguistic. In the case of physical objects such as desks, Russell describes his traditional empiricist doubt that one can legitimately infer their existence from one’s basic knowledge. In the case of classes, Russell adds considerations issuing from the set-theoretic paradoxes to this empiricist worry.

Even though he seems to be arguing that desks do not exist (or that we do not know that they do), Russell regards many statements of ordinary, mathematical and scientific discourse as true. He explicitly mentions the sentence ‘there are a number of people in this room at this moment’.<sup>6</sup> He calls this sentence a piece of undeniable *data*. He cannot help but suppose that it is true. This attitude of tolerance would extend well beyond statements about people. Russell would treat the sentences ‘there are desks’ and ‘there

---

<sup>4</sup>Russell (1989), p. 273. The quotation only explicitly addresses ordinary objects, but Russell makes similar remarks about people and mathematical objects.

<sup>5</sup>Russell (1989), p. 273-274.

<sup>6</sup>Russell (1989), p. 179.

are numbers' as true when uttered by ordinary speakers.<sup>7</sup>

Russell refuses to affirm that there are desks even though he believes that – as it is ordinarily used – the sentence 'there are desks' is true. These positions are compatible only if the sentence 'there are desks' means one thing when Russell uses it to specify what he refuses to affirm and means something different when other people use it to express a truth. When Russell says that he refuses to affirm that there are desks, he uses 'there are desks' in an extra-ordinary sense. Whatever sense this is must be explained.

The issue therefore becomes: what does Russell mean when he refuses to affirm that there are desks? Though Russell doesn't use the expression, he refuses to affirm sentences such as 'there are desks' or 'there are people' when he thinks they would *ontologically commit* him to desks or people. In his own words, Russell denies that various items are among his "inventory of the world," or that they are among the entities assumed by his theory.<sup>8</sup> Later ideal language ontologists also identify the ontological use of 'there are Fs' with the confession that one is ontologically committed to Fs.<sup>9</sup>

Unfortunately, it is of little help to explain the ontological use of 'there

---

<sup>7</sup>Mathematical contexts also require tolerance. It falls out of his theory of classes that uses of 'there are classes' in the context of mathematics are true. See Definition 20-071 of Russell and Whitehead (1957) (p. 190). This fact is explicitly mentioned with some caveats to be discussed later in Russell (1989), p. 265.

<sup>8</sup>Russell (1989), pp. 214, 221-222, 236. Sometimes, Russell uses the work 'inventory' slightly differently, to describe which sorts of facts exist according to a theory. For instance, pp. 216-217.

<sup>9</sup>"Let us say that a really (or, equivalently, fundamentally) exists iff we are ontologically committed to a, and that a exists, but doesn't really exist[...]" (Cameron (2008)p. 6)

are' in terms of ontological commitment, because the notion of ontological commitment is usually explained in terms of what there is, in the ordinary sense. Consider Russell's metaphor of taking an inventory of the world. When one asks for an inventory of a room, one wants to know what there is in the room. Similarly, philosophers who follow Quine say that including desks in one's inventory of the world, or ontologically committing to them, just amounts to saying that there are such things, in the ordinary sense of 'there are'.<sup>10</sup> Russell wants an inventory of the world, but he does not want to know what there is in the world (in the ordinary sense). One may suppose that there are desks (in the ordinary sense) without thereby including them in one's inventory. So, the fact that Russell identifies the ontological use of 'there are' with a confession of ontological commitment shows that the usual explanation of this latter notion is unsatisfactory for his purposes.

We therefore need to probe more deeply into Russell's view in order to understand his agnosticism about desks. Russell attempts to explain his agnosticism about desks by claiming that the word 'desk' is an *incomplete symbol*. That is, the expression 'desk' vanishes when sentences containing it are translated into a fully analyzed language.

It is important [...] if you want to have any idea what there really is in the world, to realize how much of what there is in phraseology is of the nature of incomplete symbols.<sup>11</sup>

---

<sup>10</sup>Quine (1999b), p. 12.

<sup>11</sup>Russell (1989), p. 253.

The fact that sentences ostensibly about desks can be translated or analyzed into sentences containing no desk vocabulary is supposed to explain what it means to deny that there are desks, ontologically speaking.

A major aim in this chapter is to discern how this talk of analysis is meant to explain the ontological use of ‘there is’. I also want to discern to what extent analysis is necessary to harmonize one’s theory with one’s ontology. I will presuppose that the explanation of the ontological sense of ‘there is’ takes one of two forms. Either, the discussion of analysis is meant to deliver an explicit definition of the ontological sense of ‘there is’ in terms of the ordinary sense. (Most likely the ontological sense will be a *restriction* of the ordinary.) Or, the discussion is meant to implicitly define or explain the meaning of the ontological sense, though the ontological sense cannot be explicitly defined in terms of the ordinary sense of ‘there is’. My thesis will be that neither form of explanation is successful. Indeed, I will argue that one needn’t translate or analyze ordinary and scientific statements into a better language in order to explain what there is, ontologically speaking.

## 4.2 Ontology and Incomplete Symbols

In “On Denoting,” Russell rejected the view that every expression must have a meaning. In particular, he argued that the proposition expressed by a sentence containing a definite description such as ‘the present king of France is bald’ does not have any constituent corresponding to the description ‘the present king of France’. Definite descriptions are *incomplete symbols*. Sen-

tences of the form ‘the F is G’ systematically express propositions whose constituents correspond to the constituents of a sentence roughly of the form ‘there is exactly one F and it is G’. A sentence of the latter sort is an *analysis* of a sentence of the former; it more perspicuously represents the proposition expressed by the original sentence. Because the proposition expressed by a sentence such as ‘the present king of France is bald’ does not contain a constituent corresponding to ‘the present king of France’, one may explain why the sentence is meaningful without believing in or ontologically committing to an entity corresponding to this expression. Indeed, one may even suppose that sentences containing ‘the present king of France’ such as ‘the present king of France does not exist’ are true without thereby ontologically committing to a king of France.

In PLA, Russell applies his notion of an incomplete symbol to a wide class of expressions. He classifies as incomplete symbols expressions purporting to refer to desks, people and classes. Russell’s analysis of expressions for classes is most developed.<sup>12</sup> Sentences of the form ‘the class of Fs is G’, ostensibly about classes, actually express propositions which would be better expressed by sentences about propositional functions. Thus, the proposition expressed by a sentence of the form ‘the class of Fs is G’ is better represented by a sentence of the form ‘there is an elementary propositional function which holds of all and only Fs, and it is G’.

---

<sup>12</sup>Russell’s discussion of classes can be found, among other places, in Russell and Whitehead (1957), Introduction, Chapter 3, p. 72. and Chapter 8 of Russell (1989).

This latter sentence does not contain any constituents corresponding to classes. As Russell says in *Principia Mathematica*,<sup>13</sup> “when the *definiens* is substituted for the *definiendum*, there no longer remains any symbol which could be supposed to represent a class.” Russell concludes, “[t]hus classes, so far as we introduce them, are merely symbolic or linguistic conveniences, not genuine objects as their members are if they are individuals.” Russell reasons from the claim that the proposition expressed by sentences of the form ‘the class of Fs is G’ do not contain classes as constituents to the claim that they do not ontologically commit to classes. That is, it is compatible to hold that sentences of the form ‘the class of Fs is G’ – and even ‘there are classes’ – are true and that, ontologically speaking, there are no classes. Classes, in Russell’s words, are *logical fictions*.

The fact that ‘there are classes’ has syntactic constituents that do not correspond to the constituents of the proposition it expresses is supposed to entail that one can hold that a sentence such as ‘there are classes’ is true without thereby ontologically committing to classes. One can hold the sentence to be true without believing that, ontologically speaking, there are classes. But how is this inference justified? Why does the fact that the sentence has syntactic constituents which do not correspond to constituents of the proposition it expresses entail that one can hold the sentence to be true without including classes in one’s inventory? In the next two sections, I will discuss some superficial complications and developments of the notion of an incomplete symbol.

---

<sup>13</sup>Russell and Whitehead (1957), Introduction, Chapter 3, p. 72.

I will then argue that the appeal to the notion of an incomplete symbol alone cannot do the ontological work that Russell requires of it.

#### 4.2.1 Incomplete Symbols and Logical Fictions

There is a crucial difference between the no-class theory and the theory of descriptions. The theory of descriptions allows one to maintain that there is no king of France while at the same time agreeing that certain sentences containing the expression ‘the king of France’ are true. For instance, one cannot infer that there is a king of France from the fact that the sentence ‘it is not the case that the king of France is bald’ is true. In this sentence, ‘the king of France’ does not occur as a name. By way of contrast, one can infer that there is a king of France from the truth of a sentence in which ‘the king of France’ occurs in what Russell calls primary position, such as ‘the king of France is bald’. This difference arises because the truth of the latter sentence, but not the former, entails the truth of the sentence ‘the king of France exists’. Thus, the mere fact that ‘the king of France’ is an incomplete symbol – it does not *refer* to a constituent of the proposition expressed by sentences containing it – does not entail that the king of France is a logical fiction.

In the case of the no-class theory, the matter is different. Russell believes that denying the existence of classes is compatible with asserting the truth of all of the sentences about classes needed for mathematics. The sentence ‘there are classes’ is among these. In the no-class theory, its analysis is roughly ‘there are elementary propositional functions’. This latter sentence is

true. Therefore, ‘there are classes’ is true. So in the case of classes, Russell must hold that it is consistent for a person to deny that there are classes and at the same time regard the sentence ‘there are classes’ as true.

This difference between the no-class theory and the theory of descriptions caused a stir among many of Russell’s early commentators. Urmson,<sup>14</sup> for instance, cites Russell’s remark that classes are not genuine objects and avers, “Russell is now writing as though to show that ‘X’ is an incomplete symbol is tantamount to showing that Xs don’t exist.” On Urmson’s view, the no-class theory amounts merely to a strategy for blocking an argument for the existence of classes – just as the theory of descriptions blocks an argument for the truth of ‘the king of France exists’ from the truth of ‘there is no king of France’. He accuses Russell of conflating the failure of this argument for the existence of classes with a proof that there are no classes. Though Urmson is right that the case of definite descriptions shows that a logical fiction cannot simply be defined as anything symbolized by an incomplete symbol, this rhetoric is overblown. Russell is not as confused as Urmson suggests. Russell’s considered position is one of agnosticism about classes and other so-called logical fictions. Even in the quote from *Principia* above – which Urmson cites – Russell qualifies his remark to say that classes *insofar as he introduces them* are not genuine objects. One might plausibly read this remark as entailing only that nothing he has said requires them to be genuine objects.

---

<sup>14</sup>Urmson (1971), p. 30.

Moreover, Russell accepts the inference which Urmson claims he denies. That is, the inference from, say, the truth of ‘the null set is empty’ to the truth of ‘there are classes’ is justified by the logic and definitions of *Principia*. What Russell rejects is that one can infer that there are classes (ontologically speaking) from the truth of ‘there are classes’. Russell thinks that the truth of ‘there are classes’ is compatible with agnosticism about whether there are classes. This compatibility is supposed to be explained by the fact that the proposition expressed by ‘there are classes’ is better represented by ‘there are elementary propositional functions’. In what follows I will investigate the adequacy of this explanation.

#### 4.2.2 The Structure of the Facts

I have neglected a development in Russell’s view that occurred between “On Denoting” and PLA, which is of some importance to the issues under discussion. During this period, Russell decides that there are no propositions. Though his reasons for this decision are complex, the primary consideration cited in PLA is that he cannot believe in *objective falsehoods*. He argues,

[I]t does not seem to me very plausible to say that in addition to facts there are also these curious shadowy things going about such as ‘That to-day is Wednesday’ when in fact it is Tuesday. I cannot believe they go about the real world.<sup>15</sup>

---

<sup>15</sup>Russell (1989), p. 223.

Propositions themselves become logical fictions in PLA. They must “be subject to analyses, be taken to pieces, pulled to bits, and shown to be simply separate pieces of one fact[.]”<sup>16</sup>

Without propositions, Russell needs a new way to define the crucial notion of an incomplete symbol. He appeals to an idea which has become a staple of contemporary metaphysics: truth-makers.<sup>17</sup> The truth-maker theorist supposes that sentences are true or false in virtue of what there is in the world. Russell argues that the truth-value of a sentence such as ‘this is red’ depends on more than just the existence of the individuals and properties it is about, in this case a particular *sense-datum* and the property of being red. For the two might have existed in a world where the sentence ‘this is red’ is false. Therefore, something further is required to make this sentence true. He calls this thing a fact.<sup>18</sup> Thus, the sentence ‘this is red’ is about some particular *sense-datum* and the property of being red, but is made true by the fact that the *sense-datum* is red.

According to Russell, facts have a structure of the sort that he previously ascribed to propositions. The fact that, say, *this* is red is composed of the particular *sense-datum* and the property of being red. This structure can be misrepresented. Sentences containing expressions purporting to refer to people, desks, streets, numbers and classes, though true, misrepresent the

---

<sup>16</sup>Russell (1989), p. 224.

<sup>17</sup>Armstrong (1997) is a contemporary defense of truth-makers.

<sup>18</sup>Russell (1989), p. 183.

facts that make them true. The expressions do not correspond to constituents of the facts. As a result, the expressions are *incomplete symbols*.

I will adopt Russell's formulation in terms of facts rather than propositions, since this formulation allows me to better describe the continuity between Russell and subsequent ideal language ontologists who would hesitate to say that the *analysis* of a sentence is justified by anything contained in thought it expresses.

These philosophers have good reason to hesitate. An essential component of Russell's view is that people are ignorant about an aspect of what they say. Upon attempting an analysis, "you find that what you have said is most fearfully vague and that you really do not know what you meant."<sup>19</sup> On Russell's view, when one thinks that there is a table, one is thinking a proposition about the ultimate constituents composing the table. Even after Russell banished propositions from his ontology, he still held that there was a tight correspondence between a belief and the fact believed to exist, and therefore naturally thought that one is ignorant of the structure of both the facts and one's own thoughts. All of the multifarious constituents of the fact which makes true the belief expressed by 'there is a table' make their way into this belief.

Yet, it is more plausible to ascribe this high level of ignorance about the structure of the facts that make one's utterances and beliefs true than it is

---

<sup>19</sup>Russell (1989), p. 179.

to ascribe ignorance about the structure of one's own thoughts. Many people would find it implausible that in thinking a thought expressed by a sentence ostensibly about tables one has a full idea of the underlying reality that makes this thought true. Ted Sider, speaking about the facts "underlying" the truth of utterances, gives expression to this preference,

What "underlying" amounts to is a complex issue. Here I will say only that ordinary speakers needn't have any idea of what unfathomably complex reality underlies their ordinary utterances, just as they needn't have any idea of the fundamental physics [that] underlies their ordinary utterances.<sup>20</sup>

Facts have a greater distance from the subject than propositions do, making the accusation that one is massively ignorant of their structure considerably more plausible. Thus, Russell's move from propositions to facts makes his deployment of the ideal language method more palatable, provided that one is willing to dispense with his view that beliefs closely match to the facts that make them true, which subsequent ideal language ontologists were happy enough to do.

### 4.3 The Ontological Sense of 'There Is'

I now move to the crucial question: how are we to understand the ontological sense with which Russell uses 'there is'? In PLA, Russell cites a number of features to contrast purported logical fictions with genuine objects.

---

<sup>20</sup>Sider (MS), p. 8.

It is possible that he means to define the ontological sense of ‘there is’ in terms of one of these other features. That is, it is possible that he uses ‘there are Fs’ in its ontological sense to mean, for some property  $\Phi$ , that (i) there are Fs and (ii) Fs have  $\Phi$ . What there is, ontologically speaking, is a *restriction* of what there is, *simpliciter*. It is or is analogous to an instance of restricted quantification. Just as when one says ‘there is beer’ one usually means that there is beer in a certain location, when one utters ‘there are Fs’ in an ontological context one means that there are Fs that have a certain additional property,  $\Phi$ . Different values for  $\Phi$  correspond to different *restriction strategies*.

Russell explains his claim that, ontologically speaking, there are no classes by arguing that terms for classes do not *refer to* constituents in the facts which make sentences containing these terms true. Does this mean that there are classes in the ontological sense just in case (i) there are classes, (ii) they are constituents of facts and (iii) some term refers to them?

This can’t be right. The semantic relation between terms for classes and the constituents of facts is relatively uninteresting from the point of view of taking an inventory of the world. For illustration, suppose Russell is correct that expressions for classes neither refer to nor describe constituents of facts, but rather stand in some other semantic relation to these constituents, call it *reference\**. On this view, class-terms *refer\** to classes which are constituents of facts. It would be absurd to infer from that classes are not in one’s inventory of the world. After all, there would still be classes, and they would be constituents of facts. The only thing peculiar about them would be their relationship with

our expressions.

Russell's agnosticism about whether there are classes does not seem to rest on the specific semantic relation between terms for classes and the classes themselves, but rather on whether classes are constituents of facts *at all*. The most plausible interpretation is that Russell assumes the background principle that everything which, ontologically speaking, exists is either a fact or a constituent of a fact.<sup>21</sup> This assumption seemed so natural for Russell's successors that they were willing to move immediately from the claim that an object is not a constituent of a fact to the claim that it does not exist.

Metaphysics is a systematic study concerned to show what is the structure of the facts in the world to which reference is made, with varying degrees of indirectness, whenever a true statement is made. In so far as the aim of metaphysics were achieved, it would enable us to know what precisely there is in the world.<sup>22</sup>

Since Russell infers that, ontologically speaking, there are no classes from the fact that classes are neither facts nor constituents of facts, it is tempting to think that he simply *defines* the ontological use of 'there are Fs' to mean (i) there are Fs and (ii) Fs are either facts or constituents of facts. On this view, one includes classes in one's inventory of the world just in case one says that there are classes and that they are constituents of facts. Russell's profession of

---

<sup>21</sup>This principle recalls Russell's earlier position that everything that exists (even propositions) is a constituent of a proposition, and indeed, everything can be made a subject of a proposition. Thus, Russell worried about "the contradiction always to be feared, where there is something that cannot be made a logical subject?" Russell (1996), (§74).

<sup>22</sup>Stebbing (1932), p. 65.

agnosticism about whether there are classes is consistent with the other things he says, he thinks, because nothing he says requires them to be constituents of facts.

This view of ontological commitment is unattractive. Russell's view developed in PLA was supposed to have *fewer* ontological commitments than his earlier views. Russell is supposed to be reducing the number of kinds of entities which he had *believed in* or *included in his inventory of the world* in the past. These included people, classes, propositions and tables. Yet, many of Russell's earlier views made no mention of facts. They did not assert the existence of such things. Therefore, they did not assert the existence of facts or constituents of facts. If we say that a theory ontologically commits to Fs just in case it asserts that there are Fs and that they are either facts or constituents of facts, then we must say that Russell's previous view had no commitments at all. This is surely the wrong result. So we should reject the view that a theory must include the claim that there are facts in order to have any ontological commitments. Similarly, Russell was aware of and argued against a large number of other theories which did not posit facts. Surely, these theories had *ontologies*, even if Russell did not like them. The thesis that there are facts is a substantive ontological commitment for Russell. It therefore should not be used to *define* ontological commitment.

One expression which Russell uses to differentiate logical fictions from genuine objects is 'ultimate'. Many contemporary ideal language ontologists use the related term 'fundamental'. Russell says repeatedly that objects such

as desks, classes and people do not need to be included in one's inventory of the world, because they are not *ultimate*. For instance, Russell says,

[Y]ou can get down in theory, if not in practice, to ultimate simples, out of which the world is built, and that those simples have a kind of reality not belonging to anything else.<sup>23</sup>

For Russell, the constituents of facts just are the ultimate simples. These are contrasted with the relative simples which are the simples *according to a given theory*. The ultimate simples are postulated as the simples that remain once analysis is completed.

One might interpret Russell as arguing in the following way. Ontologically speaking, there are desks just in case (i) there are desks and (ii) desks are ultimate simples. Only constituents of facts are ultimate simples. Russell is agnostic about whether desks are constituents of facts, making him an agnostic about whether they are ultimate simples. Thus, he is an agnostic about whether, ontologically speaking, there are desks. Russell's appeal to *ultimacy* – or *fundamentality* – has been echoed by other ideal language ontologists<sup>24</sup>

---

<sup>23</sup>Russell (1989), p. 270. On the same page, Russell characterizes numbers as logical fictions and not among the ultimate constituents of the world. On p. 274, Russell says that hallucinations, by way of contrast, are among the world's ultimate constituents.

<sup>24</sup>John Wisdom (1933) (p. 49.) whose strategy for identifying logical fictions also involves identifying the *fundamental* entities and facts, though he ultimately attempts an analysis of the notion of fundamentality. Ross Cameron (2009a) also defended a view of this sort. After an exchange with Jonathan Schaffer (2008), he combined his position with the view that the ontological sense of 'there is' is primitive, not definable as a restriction of the ordinary notion. I will therefore wait to address his views until I come to consider *primitivism* about the ontological sense of 'there is'.

Unfortunately, this restriction strategy does not accurately characterize Russell's position, nor is it successful on its own terms. Russell does believe that the ultimate simples have *a kind* of reality not had by other things, but that doesn't mean that they are the only things that possess reality. In particular, Russell continues, "the only other sort of object you come across in the world is what we call facts[.]" Thus, in addition to the ultimate simples, there are some genuine complex objects in the metaphysics of PLA. If only simples can be said to exist in the ontological sense, then there would be no way to distinguish a theory which posits genuine complexes – such as facts in PLA – from a theory which makes use of *logical fictions*. This point, of course, does not depend on the details of Russell's system. The claim that only fundamental things exist is a substantive ontological thesis. One needs to allow for the possibility that someone *ontologically commits* to complexes, even if there are in fact no such things.

The restriction strategies considered so far have attempted to define the ontological sense of 'there are Fs' as (i) there are Fs and (ii) are  $\Phi$ . The general problem with these approaches is that an ontologist can consistently include Fs in her inventory and yet deny that Fs have property  $\Phi$ . An ontologist may include classes in her inventory, and yet deny that she has referred to or described them. (She may designate them through some other semantic relation.) An ontologist may include them in her inventory and yet deny that they are facts or constituents of facts. (She may indeed deny that there are any facts.) Finally, an ontologist may include them in her inventory and yet

deny that they are ultimate. All of these are consistent. In the next section, I will consider a restriction strategy which attempts to get around this general difficulty through the right choice of the property  $\Phi$  in terms of which the ontological sense of ‘there is’ is defined.

#### 4.4 Reality, Entity, Existence

In PLA, Russell often uses explicitly ontological vocabulary to express his position. For instance, he says that “propositions are not what you might call ‘real’[,]” and would say the same for many other purported logical fictions.<sup>25</sup> He contrasts these unreal things with entities such as sense-data (including hallucinations), which he – with some irony – calls real.<sup>26</sup>

Another term Russell uses to describe his position is ‘entity’. For instance, he suggests that Occam’s Razor rules in favor of regarding classes as logical fictions, since “you run less risk of error the fewer entities you assume.”<sup>27</sup> Though Russell agrees that there are classes, he says that they are not entities assumed by his theory. One might suppose, then, that Russell’s agnosticism about classes is not a skepticism about whether there are any such things, but about whether they are entities.

It is tempting therefore to ask whether Russell means to adopt a restriction strategy making use of this vocabulary. Can Russell be understood

---

<sup>25</sup>Russell (1989), p. 214.

<sup>26</sup>Russell (1989), p. 274.

<sup>27</sup>Russell (1989), p. 222.

as defining ‘there are Fs’ in the ontological sense as (i) there are Fs and (ii) Fs are real (or are entities)? Kit Fine has recently argued that there are some things that aren’t real. Since he holds that they are unreal, Fine argues that Fs don’t need to be numbered among his ontological commitments.

[E]ven though two nations may be at war, we may deny that this is how things really or fundamentally are because the entities in question, the nations, and the relationship between them, are no part of Reality as it is in itself.<sup>28</sup>

Fine says that one can determine a theory’s ontological commitments (the inventory of the world according to the theory) by determining what the theory says is real.<sup>29</sup> Even if there are nations, they needn’t be included in the inventory of the world, should they turn out not to be real. If they are unreal, then – ontologically speaking – there are no such things.

Fine’s proposal solves many of the difficulties which confronted the other restriction strategies. One reason is that it is natural to identify an inventory of the world with an inventory of reality. Even Quineans such as Alonzo Church (1958) admit<sup>30</sup> that there are a number of questions that the traditional project of ontology is supposed to address: ‘what is real?’, ‘what is there?’ and ‘what entities are there?’. If Fine is correct that there are some things that aren’t real, then they certainly don’t belong in our inventory of reality: that is, our ontology. Similarly, if a theory says that classes aren’t

---

<sup>28</sup>Fine (2001), p. 26.

<sup>29</sup>Fine (2009).

<sup>30</sup>See p. 1008.

real, it is legitimate to infer that it does not include them in its inventory of the world. Thus, there is no reason to worry that a theory could ontologically commit to things it calls unreal. In saying that the objects are unreal, the theory automatically excludes them from its ontology.

This proposal can also distinguish genuine complexes from logical fictions. Fine believes that arguments about what is real can be settled, in part, by appealing to grounding – a relation analogous to truth-making. He argues<sup>31</sup> that “there is a general presumption in favor of the grounded not being real.” So, if the facts about Fs are grounded in the facts about Gs, then there is a presumption that Fs are unreal. Genuine complexes and logical constructions can be distinguished as follows. Complexes are grounded, but real things; logical fictions are grounded, but unreal.

Although he may find many aspects of Fine’s position congenial, Russell would not accept it. Russell thinks that most uses of the word ‘real’ in philosophy are illegitimate or require explanation.<sup>32</sup> When he denies that propositions are real, he takes this to require explanation.

[‘Reality’] is a vague word, and most of its uses are improper. When I talk about reality as I am now doing, I can explain best what I mean by saying that I mean everything you would have to mention in a complete description of the world.<sup>33</sup>

---

<sup>31</sup>Fine (2001), p. 28

<sup>32</sup>Russell (1989) He says, “[s]ome of the notions that have been thought absolutely fundamental in philosophy have arisen; I believe, entirely through mistakes as to symbolism – e.g., the notion of existence, or, if you like, reality.” (p. 185-6)

<sup>33</sup>Russell (1989), p. 224.

In this passage, Russell attempts to explain the notion of reality in terms of taking an inventory of a world, the things mentioned in a complete description. Fine, by way of contrast, takes the notion of reality as basic and attempts to explicate the project of ontology in terms of it.

Russell's suspicion might legitimately arise from a concern that debates over what is real are *undisciplined*.<sup>34</sup> In ordinary life, we sometimes debate about what what is real, but it is difficult to get a clear sense of what counts as evidence for these claims. Cian Dorr expresses a worry of this kind about grounding, but his words apply just well to the notion of reality:

To the extent that analytic metaphysicians have been willing to engage in debates about ontological priority, their substantive conclusions have been wildly divergent. If there is any consensus, it is merely that those who want to defend claims about ontological priority should articulate these claims in a certain kind of detail. It is not enough simply to announce that Xs are more fundamental than Ys: if I want to defend this claim, I am supposed, at a minimum, to (i) introduce a language in which I can talk about Xs without even seeming to talk about Ys; and (ii) make some kind of adequacy claim about this language, e.g., that it can express all the genuine facts that we can express using Y-talk, or that all the Y-facts supervene on the facts stateable in the language.<sup>35</sup>

Absent the discipline provided by such regimentation, Russell would view Fine's use of 'unreal' as a term of mere abuse, and as such, an implicit admission that the unwanted items are in his inventory. In considering the position

---

<sup>34</sup>I think that Wright (1992) uses the word 'discipline' to convey a similar notion, though I do not wish to commit to any of his specific theses.

<sup>35</sup>Dorr (2010).

that hallucinations, for instance, are unreal, Russell says<sup>36</sup> that ‘unreal’ used “in that way is a term of abuse and never would be applied to a thing that was unreal because you would not be so angry with it.” On this view, to call the objects unreal as Fine does, and not unpack this in terms of language would be, as Quine<sup>37</sup> later puts it, mere “bandying of empty honorifics and pejoratives.”

Russell uses the word ‘real’ as a technical expression to mean what is left after analysis. He therefore cannot presuppose that it is ontologically loaded as Kit Fine can. Given the way he has defined the notion of analysis, the real will include only facts and constituents of facts. However, we saw above that one cannot simply define the ontological sense of ‘there is’ so as to include only facts and constituents of facts. Thus, Russell cannot use this technical notion of reality in order to explain the ontological sense of ‘there is’. To do so would prejudge ontological debates as we saw before.

This leaves us at a seeming impasse. The accounts that I have considered seek to define the ontological sense of ‘there is’ in terms of the ordinary sense. An assertion that, ontologically speaking, there are Fs is to mean the same thing as an assertion that there are Fs and they have some further property  $\Phi$ . I have argued that advocates of these accounts face a dilemma. Either, they invoke ontological vocabulary which is illicit from the point of view of the ideal language ontologist. Or, the proposed definition loads the ontological

---

<sup>36</sup>Russell (1989), p. 276.

<sup>37</sup>Quine (1939), p. 704.

die, making it impossible for a theorist to have things which are not  $\Phi$  in her ontology.

## 4.5 Primitivism

I will therefore consider the possibility that Russell's discussion of analysis is meant to introduce the ontological sense of 'there is' as a new primitive which cannot be defined in terms of the ordinary sense. Although Russell offers some suggestive hints in this direction, he does not thoroughly develop a view along these lines.<sup>38</sup> However, the components of Russell's position discussed so far suggest an account of the ontological sense of 'there are' which resembles contemporary deployments of the ideal language method.

Let us review these components. An ideal language would contain no incomplete symbols. Every expression in a sentence of the ideal language would correspond to a constituent of the fact the sentence purports to state. Russell has argued that, ontologically speaking, there are no desks on the grounds that the expression 'desk' is an incomplete symbol in 'there are desks'. It does not correspond to a feature in the fact that the sentence purports to state. In Russell's view, the fact that 'desk' is an incomplete symbol is supposed to reveal why it is compatible to hold both that 'there are desks' is true and that, ontologically, speaking, there are no desks.

Perhaps, this is the wrong way of looking at things, however. Focusing

---

<sup>38</sup>Russell (1989), p. 265. See appendix.

exclusively on the fact that ‘desk’ is an incomplete symbol may be a mistake, since ‘there are’ also occurs in the sentence ‘there are desks’. Some feature of this occurrence of ‘there are’ might be revealed by analysis which differentiates it from the ontologically committing sense of ‘there are’. In PLA, for instance, Russell suggests that ‘there are’ as it occurs in ‘there are classes’ means something different than when it occurs in ‘there are particulars’.<sup>39</sup>

If Russell could identify some feature of ‘there are’ as it occurs in its ontologically committing use that is lacking in its ordinary use, then he could use this feature to explain the ontological sense of ‘there is’. Russell is likely pointing out that ‘there are classes’ is analyzed by a sentence asserting the existence of a propositional function of a certain sort. The quantifier in this latter sentence occupies a different position in the type hierarchy. But this alone is not enough. It is not enough that there are many sorts of existence, distinguished for instance by typing. One sort of existence must be *metaphysically privileged* over the others.<sup>40</sup>

Fortunately, there is a feature which metaphysically privileges one sense of ‘there are’ over others. The occurrences of ‘there are’ in ‘there are desks’ and ‘there are classes’ do not correspond to any constituents of the facts stated by these sentences. An ideal language ontologist might argue that there is an ontological sense of ‘there is’ which works like the regular sense of these words, except that it does correspond to a constituent of various facts. Let us call the

---

<sup>39</sup>Russell (1989), p. 265.

<sup>40</sup>I discuss elements of Russell’s proposal in greater detail in the appendix.

constituent of facts to which the ontological sense of ‘there is’ corresponds *real existence*. On this view, the ontological sense of ‘there is’ is not a restriction of the regular sense of ‘there is’; real existence is not a restriction of ordinary existence. Rather, real existence is like ordinary existence, except that it is *metaphysically distinguished* by being a constituent of facts.

This way of developing Russell’s philosophy puts him in line with contemporary ideal language ontologists. According to them, the expression ‘there are’ in the sentence ‘there are desks’ is defective. Ontology, they think, must be conducted in a language in which the meaning of ‘there are’ is metaphysically distinguished. Most prominently, Ted Sider has argued that there is a distinction between words with metaphysically distinguished meanings – meanings which reflect the world’s structure – and words with undistinguished meanings. According to Sider, all of the expressions in an ideal language would have metaphysically distinguished meanings.

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.<sup>41</sup>

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.<sup>42</sup>

Presumably, Sider thinks that languages containing expressions which do not

---

<sup>41</sup>Sider (2009), p. 399

<sup>42</sup>Sider (2009), p. 401.

reflect the world's structure are deficient on the grounds that they are liable to mislead people about the metaphysical structure of the world.

Sider's view of what makes these meanings special differs from Russell's. For Russell, certain words are more metaphysically revealing because they correspond to constituents of facts. Sider, however, invokes a different criterion of metaphysical importance, one based on David Lewis's notion of *naturalness*.<sup>43</sup> According to Sider, certain expressions are distinguished by having meanings which are natural. Worse languages have expressions with non-natural meanings. On Sider's view, the expressions 'there are' and 'exist' do not have natural meanings. As a result, participants in an ontological debate should translate their sentences into a language where 'there are' does have a natural meaning. He says,

[I]f 'exists' in English does not express [real] *existence*, then a debate over [real] *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 [real] *existence* than by investigating existence.<sup>44</sup>

According to Sider, an ideal language would not contain the English 'there are'. Rather, it would contain a word with a very similar role, but which picked out a metaphysically distinguished meaning.

Sider invokes the notion of naturalness and Russell invokes the notion of a fact in order to (A) explain the ontological sense of 'there is' and

---

<sup>43</sup>Developed in Lewis (1999a,c).

<sup>44</sup>Sider (2009), p. 413. Emphasis added.

(B) explain why it is necessary to replace some sentences in one's theory by others in order to harmonize one's theory with one's preferred ontology. I will argue that neither goal is successfully accomplished. First, Sider's view and the parallel Russellian view posit special features which metaphysically distinguish the meanings of certain terms. I will argue that their positions face a dilemma concerning the relevance of these metaphysically distinguishing notions to the traditional project of ontology. This dilemma is analogous to the dilemma faced by the restriction strategies I considered above: either these views prejudge substantive metaphysical debates, or they invoke notions which risk being undisciplined. Second, the goal of describing the structure of the world does not motivate the move to an ideal language. That is, this primitivism about real existence has no particular connection to the ideal language method. Despite Sider's frequent statements to the contrary, the fact that certain expressions have special, metaphysically distinguished meanings which it is one's aim to discover does not entail that a language which contains only such meanings is superior. In what follows, I will focus on Sider's views, since what I say about him can apply with equal justice to my reconstruction of Russell's views.

#### **4.5.1 Existence, Real Existence and Ontology**

On the view under consideration, one ontologically commits to Fs if and only if one thinks that Fs have a metaphysically distinguished feature which is very much like existence. Sider and Russell, of course, differ on what

makes a feature metaphysically distinguished. This raises a natural question: does it follow from their views that one cannot have ontological commitments unless one endorses respectively Sider's metaphysics of naturalness or Russell's metaphysics of facts?

Focussing on Sider's view, this question can be addressed by considering two interpretations of the criterion of ontological commitment.

**Wide Scope** One ontologically commits to Fs if and only if one thinks of a feature very much like existence but which is natural, that the Fs have it.

**Narrow Scope** One ontologically commits to Fs if and only if one thinks that Fs have a feature very much like existence, but which is natural.

On the first interpretation, the specification of real existence has wide scope. In order to ontologically commit to Fs one must think that the Fs have real existence, but one needn't know that real existence is natural. One's language may merely accidentally assign real existence to an expression. On the second interpretation, the specification of real existence has narrow scope. In order to ontologically commit to Fs, one must think that they have a natural, existence-like property. That is, one must already endorse Sider's metaphysics of naturalness.

The wide scope version strikes me as problematic. In particular, it seems as though a theorist could consistently hold of the feature real existence that Fs have it, but deny that, ontologically speaking, there are any Fs. Similarly, a theorist could consistently hold that, ontologically speaking, there are

Fs, but deny, of the property real existence, that Fs have it. Consider a speaker who employs the English expression ‘there is’ with its standard non-natural meaning but also has another expression, ‘it gives’, with a similar syntactic and inferential profile. If Sider’s metaphysics of natural and nonnatural meanings is correct, then it is possible for ‘it gives’ to mean real existence. Indeed, in Sider’s preferred metaphysics, a natural property such as real existence exerts what he calls “reference magnetism” making it quite likely that an expression with the relevant syntactic and inferential profile means real existence. However, our speaker may fail to attach any metaphysical importance to ‘it gives’, and yet believe that ‘there is’ tracks the fundamental structure of reality. Indeed, she may agree with Sider that natural features are metaphysically distinguished and hold that ‘there is’ has a natural meaning. Our speaker may hold that entities of some category – say, tables – have real existence, yet deny that, ontologically speaking, there are any tables. She would do so by asserting ‘it gives tables’, but denying ‘there are tables’. Alternatively, she might assert ‘there are tables’ and deny ‘it gives tables’.

Sider might respond to this case by denying that anyone who holds that ‘there is’ has a natural meaning could be using ‘there is’ in its ordinary sense. That is, the very fact that an agent holds that ‘there is’ has a natural meaning could make it the case that ‘there is’ in her mouth means real existence rather than ordinary existence. In Sider’s own work, he imagines speakers *stipulating* that they use ‘there is’ to pick out a natural meaning. It may be that if speakers have stipulated this, then ‘there is’ will automatically pick out real existence.

But a speaker needn't come to hold that 'there is' has a natural meaning in this way. She may very well take herself to have empirically discovered or learned by testimony that the meaning of 'there is' is natural. And, she may be willing to retract this belief at the slightest provocation. Moreover, she may be firmly committed to using 'there is' as it is used by the other members of her community. In such a case, I see no reason to suppose that 'there is' would not have its ordinary meaning.

These considerations point to the narrow scope reading of the criterion. Sider should hold that ontologically committing to Fs requires saying that they have a metaphysically distinguished kind of existence. On this view, in order for a speaker to ontologically commit to Fs, she must say that Fs have real existence, a natural feature which is very much like existence. They must thereby endorse Sider's metaphysics of naturalness. At first glance, this is implausible. My latest reconstruction of Russell's view, which resembles Sider's in many respects, uses the structure of facts to play the role that Sider has naturalness playing. It is hardly plausible that this reconstructed Russell has no ontological commitments.

But, perhaps Sider doesn't think of naturalness as a substantive metaphysical commitment in this way. Perhaps, Sider thinks of naturalness as a way to pick out the features of the world that the metaphysicist is interested in, whatever they are. He says,

There are various ways one might try to interpret this talk of structure. But what's important is that we must really make sense of it

*somehow*.<sup>45</sup>

On this reading, naturalness is intended as an ontology expression. Naturalness is postulated as whatever feature fulfills the role that the metaphysicist is interested in. ‘Natural’ is an ontology expression on analogy with ‘real’. Just as one cannot deny that something is part of reality, but hold that it is in one’s inventory of the world, one cannot deny that Fs have a natural, existence-like property and hold that they belong in one’s inventory of the world.

Indeed, Sider sometimes speaks as though his metaphysics constitutes the only legitimate way of understanding explicitly ontological vocabulary. For instance, he says,

*Pace* geometrical conventionalists like Reichenbach, 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?<sup>46</sup>

[A]cknowledging 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’.<sup>47</sup>

On this understanding, Sider agrees with Russell that many debates which deploy explicitly ontological vocabulary, such as ‘real’, are not legitimate unless they are explicated in other terms. Sider is simply postulating that there is a feature, naturalness, which can be used to explain these ontology expressions.

---

<sup>45</sup>Sider (2009), p. 399.

<sup>46</sup>Sider (2009), p. 399.

<sup>47</sup>Sider (2009), p. 401.

But is there any reason to suppose that questions about what is natural are more comprehensible than questions about what is real? Why is it not the mere bandying of a new empty honorific? We observed Russell and Quine offering reasonable concerns that debates over what is real tend to lack discipline. Russell, we saw, attempted to impose discipline on these debates by transforming questions about what is real into questions about analysis. That is, Russell used the sentence ‘propositions are not real’ as shorthand for the claim that a complete theory of the world in an ideal language need not mention propositions. But of course, this meant he was unable to define what features give rise to an ideal language in terms of the notion of reality.

Perhaps, Sider likewise thinks that questions about what is natural are more comprehensible than questions about what is real, because of the connection between naturalness and ideal languages. That is, debates about naturalness are more legitimate than debates about what is real because these debates have implications for ordinary debates about theory selection. Sider thinks that it is our duty as theorists to represent the *structure* of reality, and so infers that a theory in a perfectly natural language is better than a theory deploying both natural and non-natural vocabulary.

If this is correct, then debates over naturalness may be more disciplined than debates over what is real. Theorists have techniques for identifying which theories are good and which are not good. When a theory is not good, one often chooses to paraphrase its sentences into better sentences. Insofar as those choices reflect which vocabulary items are natural and which are not, they

impose some discipline to debates about what is natural.

I will argue in the next section that the connection between the metaphysics of naturalness and theory selection is far more tenuous than Sider lets on. That is, I shall argue that even one who agrees with Sider that discerning the natural features of the world is a goal of inquiry is under no obligation to express her theory in a language whose vocabulary has only natural meanings. Indeed, I will argue that accepting this goal of inquiry entails that a theorist is under an obligation to express herself in a language which deploys both natural and non-natural vocabulary. As a result, Sider's notion of naturalness is no more disciplined than the ordinary notion of reality.

#### **4.5.2 Structure and Ideal Languages**

Sider argues from the premise that discerning the world's structure is a goal of inquiry to the conclusion that a theory framed in a language which does not reflect that structure deficient. However, this inference is unjustified. Sider may correctly infer only that a theory expressed using vocabulary with natural meanings is better than one expressed using vocabulary with both natural and nonnatural meanings that does not mark any distinction between the two sorts of vocabulary it uses.

But, it does not follow that a theory expressed in wholly natural vocabulary is better than any theory expressed using non-natural vocabulary. In particular, a theory which deploys some vocabulary with natural meanings and some with non-natural meanings may contain claims identifying which

meanings are natural and which are not. Sider makes claims of this sort in his papers. Such a theory would not be misleading about the world's structure precisely because it would identify which meanings were nonnatural.

Eli Hirsch describes a worry of this sort. He asks,

[W]hat is the plausibility of Sider's principle that we ought to speak a language that is aligned to the world's quantificational structure?<sup>48</sup>

Supposing that some language L is aligned with the world's structure, he concedes,

[I]t would be important for the ideal inquirer to acknowledge that fact. Therefore, if she speaks [English] she ought to assert, "[L] is the language that is aligned to the world's structure." Why would it be an additional virtue, beyond knowing what the world's structure is, for her to switch to [L]?<sup>49</sup>

The Russellian version of this position faces a similar worry. A theory expressed using vocabulary items which do not correspond to constituents of facts may be liable to mislead one about the structure of the facts. One may think that a vocabulary item corresponds to a constituent of a fact. But surely any temptation to draw such an inference will be eliminated if the theory contains an explicit claim that the vocabulary item does not correspond to a constituent of a fact. Thus, even granting Sider and Russell the premise that discerning the world's structure or the structure of the facts is a goal of

---

<sup>48</sup>Hirsch (2008), p. 523.

<sup>49</sup>Hirsch (2008), p. 523.

inquiry, it does not follow that one should speak a language which mirrors these structures.

The problem is even more pressing. Suppose that one agrees with Sider that discerning which features of the world are natural is a goal of inquiry. Sider's theory which deploys natural vocabulary will tell you this, if naturalness itself is a natural property. However, it will not tell you which features of the world are not natural. How could it? It deploys no non-natural vocabulary. So the theory will not tell you that the ordinary notion of existence is not natural. Compare a theory expressed in a language which deploys vocabulary with only natural meanings with one expressed in a language which deploys vocabulary both natural and non-natural meanings. Suppose the theory with both sorts of vocabulary identifies which of its vocabulary have natural meanings and which have non-natural. The latter theory is more helpful at identifying which features of the world are natural. That is, a speaker who knows that the latter theory is true will be better able to *discriminate* natural from non-natural features of the world. She is in a position to know which features are not natural.

## 4.6 The Reason to Paraphrase: The Extent of Reality

I think that these considerations point to the following conclusion: if one thinks that there are Fs but doesn't want them in one's ontology, then the natural response is to *expand* one's theory. On this view, the problem with a theory that says that there are tables is that it hasn't said enough. Ontologists

should say what they think is the case. If they think that tables aren't real, then they should say so. If they think that, though there are tables, the tables lack some special kind of existence, then the ontologists should say that. There is no *advantage* to staying silent about one's view that tables are unreal or don't have a natural sort of existence.

Kit Fine expresses a similar view when he argues that questions about whether, say, classes should be included in our inventory of the world are genuinely questions about classes – whether they are real.

[W]e need to restore ourselves to a state of innocence in which the metaphysical claims are seen to be about the subject-matter in question – be it mathematics or morality or science – and not about our relationship to that subject-matter.<sup>50</sup>

It might be thought odd that we express a reduction of couples to their members by making reference to couples, since is not the point of the reduction to show that couples are a “logical fiction” and hence not really existent? [...] [That they are a logical fiction] does not prevent us from making non-philosophical claims about couples, such as that all the couples in the room are married; and no more should it prevent us from making philosophical claims about couples of the sort typified by reductions.<sup>51</sup>

Fine reduces claims about classes – he considers couples in particular – by directly claiming that facts about *them* are grounded in facts about other things, and then adding that they – the couples themselves are unreal. In

---

<sup>50</sup>Fine (2001), pp. 7-8.

<sup>51</sup>Fine (2001) p. 9. I have altered the sentence in the place indicated to simplify exposition, though I do not think that I have have changed the sense.

doing so, Fine refers to or asserts the existence of the couples themselves, and goes on to characterize them as unreal. On Fine's view, the issue of whether, ontologically speaking, there are couples has nothing to do with language, but with couples themselves.

Indeed, one might think that we have a general argument against the procedure of replacing one sentence one thinks is true by another in one's final theory of the world. If one thinks that a sentence *S* is true, then one should not remove it from one's theory and replace it by another sentence *S\**, even if *S\** better represents the fact stated by *S* or is composed only of vocabulary with natural meanings. One ought instead to describe the defects of *S* and assert *S\** as well. One's theory will be more informative, a more comprehensive theory of the world. Omitting *S* will leave out truths, namely *S* itself. If this is right, the only reason to paraphrase a sentence *S* in one's theory is the one that Quine suggests: one has lost confidence that *S* is true and one seeks another sentence *S\** to play roughly the same role.

This extreme conclusion is a mistake, however, and understanding why it is a mistake can provide a new understanding of the role of paraphrase in harmonizing one's theory with one's ontology. The basic premise in the argument for the extreme position is that a theory is less comprehensive, less adequate, if it omits truths. I will challenge this claim in the next chapter. I will defend the view that a theory of the world is adequate or complete just in case it has the correct ontology.

This recalls Russell's remark – which I cited earlier – that reality in-

cludes everything that must be mentioned in order to deliver a complete account of the world. So, I agree with Russell that if classes do not belong to our ontology – if, for instance, they do not belong to reality – then we should be able to describe the world completely without mentioning them. However, this does not entail that *every* theory which mentions classes is worse than a minimal theory which does not deploy this vocabulary. For if we go on to add claims of the sort that Fine considers – that classes are not real, then the theory will no longer have classes in its ontology. Thus, the broader theory expressed in an expanded language will be as good as the sparser theory expressed in the ideal language. Indeed, a theory need not include talk of classes for precisely that reason: they are not real.

If classes are unreal, then there will be at least two equally good theories of the world: a minimal theory which does not mention the unreal items and a broader theory which mentions them, asserts their existence, but then identifies them as unreal, or as having an unnatural sort of existence. Both theories will be true, and both will completely describe reality.

This fact can provide a reason why the method of paraphrase is useful in ontology, though it is not *necessary* to harmonize one's theory with one's preferred ontology. Suppose that a theorist's preferred theory contains claims with unwelcome ontology: for example, 'there are chairs'. Our theorist could expand her theory to deny that some ontologically loaded property holds of chairs. She may deny that chairs are real or are entities. Alternatively, our theorist may contract her theory, she may cast out the claim that there are

chairs. The theoretical functions of sentences entailing the existence of chairs will have to be replaced by a sentence, or set of sentences, which plays a roughly similar role. However, the theorist needn't thereby reject chair talk as untrue. She simply holds that her theory is adequate without the sentences about chairs. The reason that it can be adequate even though it leaves out true claims about chairs is that chairs are unreal or are not entities. Our theorist need not be in a position to determine which. Thus, one *may* replace a true sentence by an alternative in order to harmonize one's theory with one's ontology, though it is not necessary.

None of this entails that one is required to theorize in an ideal language, a language which deploys no vocabulary picking out non-natural or unreal features of the world. Indeed, it does not entail that it is even possible to construct a complete theory of the world in an ideal language. I have conceded Russell's claim the real things are those that *must* be mentioned in *any* complete description of the world. As I read this, it requires that for any item which is not real, there will be *some* complete theory of the world which does not mention it. However, it does not entail that there is a single complete theory of the world which fails to mention anything unreal. Put in Sider's terminology, the natural features of the world must be described by any complete theory, but this does not entail that any complete theory will mention only natural features of the world.

This position, therefore, is an intermediate between Fine's position and ideal language ontology. I agree with the ideal language ontologist that a

theorist may harmonize her theory with her ontology by replacing a sentence with objectionable ontological commitments with a sentence or sentences with no such commitments. She may replace the objectionable sentence in this way, if she can develop a complete theory of the world without it. But, if one really wants to know what makes the theory a complete theory of the world, one will have to invoke the kinds of vocabulary deployed by Fine. The theory is complete, because it describes everything that is *real*. Thus, there is an alternative way to harmonize one's theory and one's ontological commitments: one may expand one's theory so as to deny that the objects asserted to exist are real, or are entities.

## 4.7 Conclusion

Russell believed that the sentence 'there are desks' is true and yet calls himself an agnostic about whether there are desks. He attempted to explain his agnosticism by distinguishing an ordinary from an ontological sense of 'there are' and arguing that expressions ostensibly standing for desks are incomplete symbols. According to Russell, sentences containing expressions ostensibly standing for desks can be replaced by sentences without these expressions. The latter sentences, Russell, argued better reflect the structure of the facts, which do not contain desks as constituents. The ontological sense of 'there are desks' was supposed to be explained by this argument.

Yet, we found that this explanation faces a dilemma. Either, Russell simply defines the ontological sense of 'there are' in terms which pre-judge sub-

stantive ontological debates. If Russell adopts this alternative, then a theory doesn't have any ontological commitments unless it already endorses his substantive metaphysics of facts. Or, Russell defines the ontological sense of 'there are' using explicitly ontological vocabulary, such as 'exists', 'real' and 'entity'. We found that the recent version of the ideal language strategy developed by Sider faces a similar dilemma.

Russell, of course, would reject explicitly ontological vocabulary. He wants to explain his claim that desks are not real by arguing that expressions ostensibly standing for desks are incomplete symbols. The fact that desks are not real is to be explained by the fact that even though the sentence 'there are desks' is true, it should not be included in the final theory of the world. I have suggested, however, that this strategy should be inverted. A sentence such as 'there are desks' may be dropped from one's fundamental theory. But the reason that it may be dropped is that desks are not real.

## **Appendix: Primitivism in The Philosophy of Logical Atomism**

In the course of proposing to paraphrase statements containing class vocabulary into statements containing no such vocabulary, Russell says something very peculiar about the expression 'there is'.

If I say 'There are particulars' and 'There are classes', the two phrases 'there are' will have to have different meanings in those two propositions, and if they have suitable different meanings, both propositions may be true. If, on the other hand, the words 'there

are' are used in the same sense in both, then one at least of those statements must be nonsense, not false but nonsense.<sup>52</sup>

Presumably, 'there are' in 'there are particulars' is the ontological sense of the expression. Russell is ontologically committed to particulars. However, Russell has argued that, ontologically speaking, there are no classes. His argument has appealed to the fact that sentences about classes can be paraphrased. Yet, Russell now suggests that it is meaningless to say that there are classes, if 'there are' is used in the ontological sense. Thus, one cannot say that, ontologically speaking, there are no classes. This might lead one to suspect that Russell thinks that there simply are two unrelated senses of the expression, the sense of 'there is' as it occurs in 'there are classes' and the ontological sense, and that neither of two senses can be defined in terms of the other.

This view is incompatible with Russell's overall position, however. Russell wants to remain agnostic about objects such as tables, numbers and selves. He does not take a position about whether, ontologically speaking, there are such things. Thus, he cannot hold that it would be meaningless to say that, ontologically speaking, there are tables. But, classes and tables should be on the same level. Indeed, Russell often holds that such things as tables and selves are classes.<sup>53</sup> Thus, Russell should not hold that it is meaningless to say that, ontologically speaking, there are classes, if he does not hold the same position with respect to tables.

---

<sup>52</sup>Russell (1989), p. 265.

<sup>53</sup>Russell (1989), p. 191.

It is also worth mentioning that in this passage Russell gives the impression that the distinction between the ontological and non-ontological uses of ‘there is’ is present within ordinary language. This position also strikes me as implausible. In ordinary language, one uses ‘there are’ in sentences such as ‘there are tables’, ‘there are chairs’, ‘there are people’ and ‘there are prime numbers’. There are reasons to believe that ‘there is’ is univocal as it occurs in a wide range of sentences of this type. One reason is that ‘there are’ can be coordinated. Sentences such as ‘there are four people and four chairs in the next room’ and ‘there are many people in Las Vegas but few reasons to trust them’ are acceptable. I do not mean to suggest that there are no different uses of ‘there is’ in English.<sup>54</sup> But, to identify these expressions requires considerable attention to the syntax and semantics of natural language which go beyond the mere replacement strategy suggested by the ideal language ontologists. Moreover, these differences in no way support the radical minimalism about ontology supported by most ideal language ontologists.

---

<sup>54</sup>I am sympathetic to some of the arguments in, for instance, Moltmann (2003).

## Chapter 5

# On Saying Enough

In “Empiricism, Semantics, and Ontology,” Carnap argues that a theorist is free to choose among theories which differ in their ontologies. There is no norm of inquiry mandating the adoption of a theory with one ontology rather than another. Let’s call this position *ontological conventionalism*. Carnap’s argument for conventionalism appeals to a plausible and seemingly innocuous thesis which I will call (Tolerance).<sup>1</sup>

**Tolerance** It is possible to construct multiple theories of the world which satisfy all of the norms of inquiry.

Even if one believes that the world has a fixed ontology, it is tempting to agree with Carnap that it admits of multiple correct descriptions. The norms of inquiry do not discriminate between theories which differ, for instance by using polar rather than linear coordinates.

---

<sup>1</sup>The most prominent source of this view is “Empiricism, Semantics, and Ontology.” Strictly speaking, variants of this argument appear as early as the *Aufbau*. See Carnap (2003), §52. Of course, Carnap’s principle of tolerance is most prominently on display in *The Logical Syntax of Language*.

If conventionalism about *ontology* is correct, then the goal of inquiry is not to investigate a single world with a fixed totality of entities. Different theories describe the world as having different constituents. Reality does not set a standard to arbitrate between these theories. Recent versions of this argument have been defended by Hilary Putnam and Eli Hirsch.<sup>2</sup> As Putnam<sup>3</sup> puts it, “*what objects does the world consist of?* is a question that it only makes sense to ask *within* a theory or description.”

The most common responses to conventionalism deny (Tolerance). Denying (Tolerance) requires holding that the norms of inquiry are *uniquely satisfiable*.

**Uniquely Satisfiable** A set of norms of inquiry is *uniquely satisfiable* just in case there can be at most one theory which satisfies all of the members of the set.

If the norms of inquiry are uniquely satisfiable, then (Tolerance) is false.

In my view, there is only one plausible argument that the norms of inquiry are uniquely satisfiable. The argument begins by identifying two norms. One norm is truth. A theory can be criticized for containing untrue claims. The other norm I call *adequacy*. A theory must *say enough*, or be *complete*. It must be a *comprehensive* description of the world. For instance, a true theory

---

<sup>2</sup>Hirsch tends to say that ontological disputes are not substantive, rather than conventional. See Hirsch (2002, 2005, 2008) and Putnam (1983a,c, 1992b,a, 1983b, 1992a, 1994b).

<sup>3</sup>See Putnam (1981b), p 49.

of Asian history and a true theory of European history may each be interesting in itself. But a more comprehensive theory – such as the union of these two theories – is better than either theory is individually, since each describes isolated chunks of reality only.<sup>4</sup> The argument relies on a thesis about adequacy which I will call maximalism. According to maximalism, *in order for a theory to be adequate, it must contain all of the truths.*<sup>5</sup> From maximalism, it follows that if there are two wholly true theories, then at least one of them is inadequate. At least one theory omits true claims which are included in the other. Therefore, at most one theory can satisfy all of the norms of inquiry, the maximal theory which contains all truths. This argument seems powerful since all conventionalists under consideration recognize some version of the truth and adequacy norms.

I show that maximalism is false; *an adequate theory need not contain all truths.* Leaving out truths is not a theoretical deficiency. As a plausible corollary, (Tolerance) is true. But this should not be interpreted as a complete victory for the conventionalists. For, (Tolerance) alone is insufficient to yield conventionalism. I argue for the *ontological view of adequacy*, according to which whether a theory is adequate turns on whether it represents the whole of *reality*. That is, an adequate theory just is a theory which has a correct ontology. This position is implicit in Russell's remark,

---

<sup>4</sup>Maudlin (2006) discusses how the notion of adequacy or completeness arises in physics.

<sup>5</sup>The term 'maximalist' comes from Eklund (2009) though he uses it to refer to a slightly stronger thesis. Defenses of maximalism can be found in Eklund (2006, 2007, 2009), Hawthorne (2006b), and McGrath (2008).

[w]hen I talk about reality as I am now doing, I can explain best what I mean by saying that I mean everything you would have to mention in a complete description of the world[.]<sup>6</sup>

I show that this ontological view of adequacy not only provides a stable competitor to conventionalism, but allows one to see that the conventionalists, like the maximalists, do not have a satisfactory account of adequacy. I conclude by examining the conception of ontological commitment required by this view of adequacy.

## 5.1 Ontology and Inquiry

Before I turn to the debate over adequacy, I will discuss the argument from (Tolerance) to conventionalism. On what grounds do conventionalists claim that their thesis follows from the claim that there are multiple correct theories? Even supposing that there are multiple theories, why can't one say that there is a single fixed world that makes them correct?<sup>7</sup> As I see it, the argument for conventionalism relies on two further premises.

**The Theoretical Nature of Ontology** A theorist's ontology is the ontology of the theory she sincerely endorses. The normative constraints on the choice of an ontology, if there are any at all, are exhausted by the normative constraints on choosing a theory. *Thus, theorists endorse different ontologies only if they endorse different theories.*

---

<sup>6</sup>Russell (1989), p. 224.

<sup>7</sup>Hartry Field (1982) poses a version of this question in his review of Putnam (1981a).

**The Ubiquity of Ontological Differences** A theory's ontology is determined by its hyperintensional features.<sup>8</sup> Moreover, ontological differences are so sensitive to hyperintensional differences that two theories rarely, if ever, share their ontologies. Ontological convergence requires absolute or near absolute hyperintensional convergence. *Thus, if theorists endorse theories which differ in their claims, they thereby almost invariably endorse different ontologies.*

(Tolerance) together with these two theses entails that one may adopt any one of a range of theories which differ in their ontologies without violating any norms of inquiry. It follows that ontological disputes are conventional in the sense at issue.

(The Theoretical Nature of Ontology) says that ontological disputes piggyback on ordinary theoretical disputes and are governed by no norms beyond the norms of ordinary and scientific inquiry. This view has, I believe, become orthodoxy since Quine<sup>9</sup> articulated it in "On What There Is." Its plausibility derives from the fact that the project of ontology is commonly described using questions such as: *what is there?*, *what exists?*, *what is the extent of reality?* and *what entities are there?* The ontology of a theory is to be determined by the distribution of answers to these questions. Ordinary and scientific inquiry addresses whether there are bosons, whether the subconscious exists, whether Santa Claus is real, etc. Ontologists don't have special methods to address questions of this form. As a consequence, the theories answering

---

<sup>8</sup>The features of a sentence that needn't be shared by necessarily equivalent sentences are hyperintensional. For instance, a sentence's structure is a hyperintensional feature.

<sup>9</sup>Quine (1999b).

these questions are bound by the ordinary norms of inquiry.<sup>10</sup> An ontologist's theory doesn't have to meet special norms. It will succeed or fail for the same sorts of reason an ordinary investigator's theory does.

There has been periodic dissent from this orthodoxy. Most recently, Cian Dorr (2005) and Ted Sider (2009) have argued that ontological disputes can be resolved only by theorizing in a special, or ideal, language. The correct ontology, therefore, needn't be determined by the resolution of ordinary and theoretical disputes. Philosophers who take this route often do so precisely to avoid ontological conventionalism. I will argue, however, that ontological conventionalism can be resisted without divorcing ontology from ordinary and scientific inquiry.<sup>11</sup>

The other premise, (The Ubiquity of Ontological Differences), says that two theories which differ hyperintensionally will consequently differ in their ontologies. This thesis in the conventionalists' argument may sound more controversial than the previous one. It needs to be taken seriously, however, since it is a consequence of the most widely accepted view of ontological commitment: Quine's criterion. According to Quine, a theory incurs an ontology of  $\Phi$ s just in case it includes the claim that there are  $\Phi$ s. So two theories will differ in their ontologies just in case they differ in their claims as to what there is. A theory which says that there are unicorns has unicorns in its ontology. A theory which says that there are centaurs has centaurs in its ontology. It

---

<sup>10</sup>Compare Chihara (1973), p. 87.

<sup>11</sup>I address these positions in the previous chapter.

is important to appreciate that these are different ontological commitments, even though (necessarily) all and only unicorns are centaurs.<sup>12</sup>

To illustrate the fact that ontological differences are ubiquitous on Quine's criterion, consider two theories. One theory ( $T_1$ ) contains a claim,  $\Theta$ , that the other theory ( $T_2$ ) leaves out. I will assume that theories are closed under logical consequence.<sup>13</sup> Therefore,  $T_1$  includes the claim that there are self-identical things such that  $\Theta$ , but  $T_2$  does not. The two theories differ as to whether there are self-identical things such that  $\Theta$ ; one theory will have such things in its ontology, the other theory will not. The theories will thereby have different ontological commitments.

It is tempting to think that something must be wrong with the application of Quine's criterion which produced this result. One might try to propose some restriction on Quine's criterion so that it does not apply in this case. I doubt, however, that any proposed restriction will be both true to the motivations for Quine's criterion and an accurate characterization of intuitive

---

<sup>12</sup>Nothing here turns on the fact that there are no unicorns or centaurs. It should be clear, for instance, that theories which assert the existence of different kinds of things can differ in their ontological commitments even if the kinds are extensionally equivalent. A theory which says that there are massed particles and says nothing else will have different ontological commitments than a theory which says that there are charged particles and says nothing else, even if all and only the massed particles are charged particles. Moreover, necessarily equivalent existence sentences can give rise to different ontological commitments. A theory which says only that there are sets has different ontological commitments from a theory which says only that there are properties, even if sets and properties both necessarily exist. Church (1958) (p. 1013, footnote 3) offers an example similar to the one offered in the text.

<sup>13</sup>If theories are not closed under logical consequence, then Quine's criterion needs to be formulated to apply to the consequences of a theory.

ontological disputes.<sup>14</sup> I think that the sense of unease resulting from this ontological dispute is better attributed to Quine's criterion itself. In order to reject conventionalism, I will reject (The Ubiquity of Ontological Differences). I will therefore argue that Quine's criterion needs to be abandoned or seriously revised in order to resist the argument for conventionalism. Finally, unsettled worries about this example can be bracketed, because, as we shall see, the ontological conventionalists don't need the thesis in its full strength. They only need to offer specific examples of equally good theories that differ in their ontologies. I now turn to these examples.

## 5.2 Tolerance

Conventionalists argue that the features which determine whether a theory is successful – truth and adequacy – are less fine-grained than the features determining its ontology. In other words, the success conditions on theorizing are so coarse-grained that theories can vary almost arbitrarily on fine-grained features which determine ontological commitments and still be

---

<sup>14</sup>One might object that in the sentence 'There is an  $x$  such that  $x=x$  and  $\Theta$ ', the embedded open sentence ' $x=x$  and  $\Theta$ ' contains a subsentence, ' $\Theta$ ', which does not contain any variables bound by the initial quantifier, 'there is an object  $x$  such that'. Perhaps, Quine's criterion is meant to exclude claims expressed by sentences of this form. The objection, however, is mistaken. Consider the claim that there exists a being with all perfections. Any adequate regimentation of this claim will contain subsentences not bound by the initial quantifier. Thus, the purported revision would rule that the dispute over whether there is a being with all perfections – a canonical ontological dispute – is in fact not one. Perhaps some other restriction is available. J. Michael Dunn (1987, 1990) introduces a notion of "relevant" predication which could perhaps be invoked. Of course, such restrictions move further away from Quine's criterion.

completely successful. To make their argument, the ontological conventionalists have imagined communities with subtly different languages. Theories in these languages seem to differ in their ontologies. Yet, each theory seems to fulfill all of the norms of theorizing. In this section I will offer a few examples. In later sections, I offer an independent argument that multiple theories can satisfy the norms of inquiry.

Recent examples of this strategy often involve material object metaphysics. For instance, Eli Hirsch has imagined a community very much like our own except that the language of the community contains two additional words: ‘incars’ and ‘outcars’.<sup>15</sup> The members of the community describe a situation in which a car leaves a garage by uttering ‘an incar was destroyed as it left a garage, but an outcar has come into existence’. When the car re-enters the garage, they utter ‘an outcar was destroyed as it entered a garage. An incar has come into existence’. This usage pattern may result from subtleties of property law, for instance. It seems as though members of these communities are willing to assert the existence of strange entities – incars and outcars – which English speakers do not recognize. Conventionalists often suggest that since speakers of this hypothetical language would likely get along just as well as ordinary English speakers, we are in no position to hold that their theory violates a norm of inquiry.

One may also imagine more restrictive communities which seem to get

---

<sup>15</sup>Hirsch (1993), p. 26.

along just as well in the world as English speakers do, despite refusing to assert the existence of objects recognized by English speakers. One can imagine a community which does not assert the existence of certain simple machines such as pulleys; they never assert the sentence ‘there is a pulley’. Instead they describe a rope and a grooved wheel and how they function together. Members of this community – call it the NP community – think that they have given an exhaustive description of any pulley-involving situation. The theories likely to be developed by this community are expressed in sentences which neither assert nor logically entail the existence of pulleys. Even though the NP community may have slight practical difficulties, it seems as though their theory would help them get around the world as well as our own does. The theories that the members of this community develop will not include the claim that there are pulleys. Therefore, the theories likely to be endorsed by this community have different ontologies than theories likely to be endorsed by English speaking communities.

### **5.3 Are the Theories True?**

If one wants to resist (Tolerance), then one must claim either that the theories of English speakers violate a norm of inquiry or that the theories expressed in these hypothetical languages violate a norm of inquiry. One candidate norm of theorizing is truth. Perhaps the theories expressed in these hypothetical languages contain untrue claims. An opponent of conventionalism might hold, for instance, that the sentences ‘there are incars’ and ‘there are

outcars' express false claims. If they do, then there is clearly more than a conventional difference between a theory expressed using these sentences and a wholly true theory expressed in ordinary English.<sup>16</sup>

This strategy does not seem to apply to the NP community. As I set it up, their theory is a subset of the theory an ordinary English speaker will endorse. On the most natural interpretation then, their theory doesn't contain any false claims; it simply fails to contain a true one. This may be a defect, but the defect is not falsehood. The most natural interpretation, however, is not inevitable. A hardened fictionalist may invoke the success of the NP community as evidence that talk about pulleys is dispensable, and therefore may be taken to be untrue.

The plausibility of this strategy as a general response to the examples proposed by the ontological conventionalists is greatly diminished if we consider differences in actual human languages which seem to generate theories differing hyperintensionally. The difference between a theory expressed in English and one expressed in another natural language such as German is the paradigm of a conventional difference. There can be no norm requiring a theorist to express her theory in English over German. But even a minimal study of comparative syntax will reveal that sentences in different languages are put together in radically different ways and have radically different senten-

---

<sup>16</sup>Nonetheless, those who believe that the community members who utter 'there are incars' speak falsely need not ascribe any irrationality to the members this community. The members of this community may be justified in believing that there are incars. Alternatively, the members of the community may be indifferent to whether the sentence is true.

tial structures. These differences give rise to a high degree of hyperintensional differences. If ontological agreement requires a large of measure hyperintensional agreement – as it does according to Quine’s criterion – then theories in these languages are bound to conflict ontologically.

In Chapter 3, we saw an example of a hyperintensional difference between English and German which can lead to an ontological difference. Namely, the English expression ‘on’ has no precise translation into German. An English speaker is therefore likely to ontologically commit to things on other things, but a German speaker will not. Given Quine’s criterion, this is a strong *prima facie* case for the view that a theory expressed in English will differ in its ontology from a theory expressed in German. It is possible that there are phrases in German which express precisely the same properties as the English word ‘on’, but I find this unlikely. Prepositions such as ‘on’ are so highly idiosyncratic and unpredictable that it’s difficult to imagine a precisely equivalent expression in English, let alone German. Further, if there is an expression in German true only of things which are on other things, then this expression will inevitably be structured, and thereby differ hyperintensionally from the English ‘on’. The differences between English and other natural languages are often as perplexing as the differences between English and the hypothetical languages posited by the conventionalists.

## 5.4 Are the Theories Adequate?

It seems to me that one must concede that at least some theories expressed in English as well as some of these alternative languages are true. Further, the theories differ in their ontologies, provided that one's ontology is assessed by Quine's criterion. To avoid conventionalism, many philosophers have argued that these theories fail a different norm: adequacy. These theories account only for limited regions of the world, as would a theory of Asian history or of European history. They need to be integrated into a more comprehensive theory. Even if no theorist can actually construct a completely adequate theory, there is surely a normative, non-conventional difference between an adequate theory and an inadequate one. I will examine and reject one strategy of this sort, maximalism, before I present my own response to conventionalism.

In a recent article, Matthew McGrath argues that at least one of each pair of rival theories such as those considered above must leave something out. McGrath argues that rival communities such as the ordinary English community and my hypothetical NP community will "think that there are distinct elements of the world corresponding to" statements such as 'there is a pulley' and 'there is a wheel and a rope'.<sup>17</sup> Presumably, this is because the sentences 'there is a pulley' and 'there is a wheel and a rope' exhibit hyperintensional differences. McGrath concludes that they correspond to different "structured

---

<sup>17</sup>McGrath (2008), p. 491.

facts.” As I have been putting it, they express different claims. A theory expressed using only the latter sentence, but not the former, leaves out the true claim that there is a pulley, it includes only the claim that there is a wheel and rope. In McGrath’s vocabulary, it fails to state that one of these structured facts exists or obtains. McGrath sees this as problem for the theory: it leaves something out. He wants to conclude that a theory which leaves out a structured fact (or fails to express a true claim) is inadequate. A theory of this sort fails to describe the world completely. More abstractly, we may say that if  $T_1$  omits a true claim included in  $T_2$ , then  $T_2$  “hyperintensionally overpowers”  $T_1$ .<sup>18</sup> According to McGrath, theories which are “hyperintensionally overpowered” are supposed to be inadequate. McGrath is a maximalist, as I have used the term.

I will argue that McGrath moves too fast here. Most conventionalists, as McGrath is aware, simply reject the maximalist conception of adequacy underlying his argument and attempt to offer alternatives. Hirsch explicitly says in his response to McGrath that a theory need not include a given claim,  $p$ , to be adequate so long as it includes a claim with the same truth conditions or intension as  $p$ .<sup>19</sup> Putnam and Carnap agree with Hirsch that an adequate theory need not express every true claim. Unlike Hirsch, they believe that a theory’s adequacy turns on how responsive it is to the available evidence, not

---

<sup>18</sup>This is John Hawthorne’s phrase.

<sup>19</sup>The same goes for structured facts, if there are such things. Hirsch says “I ... require of a verbal dispute that each side be able to formulate, at least in rough terms, the truth conditions ... of the other side’s asserted sentences.” (Hirsch (2008), p. 512.)

how finely it delimits modal space.<sup>20</sup> Now, I don't find these views particularly plausible. The account of adequacy which Carnap and Putnam embrace seems to invoke a discredited verificationism. Hirsch's conception of adequacy has difficulty accounting for the fact that the norms of inquiry do in fact discriminate between necessarily equivalent theories. In particular, it is common to suppose that Kripke's existence necessitates the existence of his mother. Yet, a theory which says only that Kripke exists is inferior to a theory which says that both Kripke and his mother exist.<sup>21</sup>

Nonetheless, the plausibility of the specific conceptions of adequacy offered by the conventionalists is irrelevant here. McGrath can't simply take for granted that a theory is normatively worse merely for failing to include a true claim or failing to state a structured fact. Indeed, in the next section, I will offer an argument that maximalism is simply wrong. The failure of this maximalist conception of adequacy threatens to make some form of conventionalism seem inevitable, even if the conventionalists themselves are not clear on which conception of adequacy is correct.

## 5.5 Can Adequate Theories Leave Out Truths?

In this section, I consider and reject an argument for the maximalist conception of adequacy which McGrath seems to presuppose. The argument is

---

<sup>20</sup>See Putnam (1983a) and Carnap (1959).

<sup>21</sup>John Hawthorne (2009) provides a useful host of examples about how one's views on modal space are inevitably connected to one's ontological views and why this poses a problem for the conventionalists.

explicitly raised in the works of Matti Eklund and John Hawthorne. The reasons for rejecting a premise of the argument also provide a reason for rejecting the maximalist account of adequacy.

Eklund and Hawthorne suggest that an adequate theory must provide a standard syntax and semantics for every sentence. Thus, for every sentence *S* of any language, an adequate theory must include a *T*-sentence for *S*, it must include a sentence which specifies the referents for the singular terms in *S*; it must also include a sentence which specifies the properties or states ascribed by the predicates of *S*, and so on. The argument purports to show that any theory which adequately characterizes the semantics for *S* and admits that *S* is true must also include the claim expressed by *S*. As I reconstruct the argument, it has three premises.

- P1** To be adequate, a theory must identify the true sentence in any given theory. That is, for every true sentence *S*, the theory must say that *S* is true.
- P2** Every adequate theory must include a standard compositional semantics for every sentence *S*. This includes a *T*-sentence for *S*, an assignment of referents to *S*'s singular terms, properties to *S*'s predicates, and so on.
- P3** If a theory asserts that a sentence *S* is true and contains a standard semantics for *S* of the sort required by (P2), then it also includes the claim expressed by *S*.
- C** Therefore, every adequate theory includes every truth.

I will argue that (P2) is false. In particular, if it is true, then there are no adequate theories. First, I will briefly describe how Eklund and Hawthorne deploy the argument.

Eklund frames the argument in terms of a reference condition. He considers two characters whom he calls Carnap and the Polish Logician, though the names are not meant to represent any historical figures.<sup>22</sup> These characters adopt theories which differ in the way that the theory of the NP community differs from a theory which an English speaker would endorse. Eklund suggests that if both theories are wholly true and adequate, then it should be appreciable from the point of view of either theory. Further, each theorist must provide a standard semantics for the sentences expressing the other's theory. Eklund says,

What ... should Carnap say about the truth value of a sentence of the Polish Logician's language 'F(t)', where 't' is a singular term of that language purporting to refer to an object Carnap officially does not recognize? Carnap should be able to recognize ... that this sentence is true. But a sentence of this form is true only if 't' refers. In general, an atomic sentence, of any language, is true only if the predicate is true of the object referred to by the singular term. But this presupposes that the singular term has a referent.<sup>23</sup>

In the course of theorizing, Carnap will have to offer a standard semantics for the Polish Logician's assertions. So, Carnap – suppose that he endorses the NP community's theory – will have to offer a semantics for a sentence such as 'this is a pulley'. In doing so, Carnap will have to identify an object referred to by 'this' such that the sentence is true if and only if the predicate 'is a pulley' applies to that object. Carnap is committed to the view that the sentence

---

<sup>22</sup>Eklund is following Putnam (1992b).

<sup>23</sup>Eklund (2007), p. 387.

is true. As a consequence, Carnap must admit that there is an object which satisfies the predicate ‘pulley’.

One cannot immediately infer that Eklund’s Carnap must assert the claim that pulleys exist in order for his theory to be adequate. At best, one can infer that he is required to assert that there is an object satisfying ‘pulley’. But the difference is too close for the ontological conventionalist to be comfortable.

John Hawthorne offers an argument which is meant to push the conventionalist even further. Hawthorne’s proxy, the Plenitude Lover, can appeal to a whole range of semantic explanations unavailable to the ontological conventionalist, the Convention Lover.

The Plenitude Lover will be willing to use his own language to characterize the semantic contribution of singular terms and quantifiers in the languages of others, speaking freely of ‘the referents of proper names of other languages’ and so on. . . . The Convention Lover . . . will be happy to speak of the truth and falsity of sentences with superficially more restrictive ontologies. But she will not use the familiar kinds of apparatus to describe how those sentences get to be true; she will not use the concepts of domain, reference, extension, property and so on in this connection, since such mechanisms require characterizing the semantic behavior of alien sentences using one’s home ontology.<sup>24</sup>

In order to be adequate, a theory must characterize every possible sentence and the claim it expresses in a rather rich degree of detail. In particular, the theory will need to assign a referent to each singular term, a property to

---

<sup>24</sup>Hawthorne (2006b), p. 109.

each predicates, a quantifier meaning to each quantifier, and so on. Further, the theory will need to assert that the sentence is true if and only if these items are arranged in the right way. Once a theory has provided a standard semantics for a sentence, the theory will be unable to include the claim that the sentence expresses a truth without also including the truth which the sentence expresses.

But here's the problem. Suppose that  $Th$  is a wholly true and adequate theory. The fact that  $Th$  is adequate suggests that it has a somewhat high degree of expressive power. For instance, it probably refers to its own sentences, the sentences of other languages, and so on.<sup>25</sup> If (P2) is correct, then  $Th$  must provide a standard semantics, including a T-sentence, for every sentence  $S$  of every language. Now consider the sentences expressing  $Th$  itself. By (P2),  $Th$  must contain a standard semantics for each sentence  $S$  which expresses a claim in  $Th$ . Providing a standard semantics requires a T-sentence of the form:  $\ulcorner S$  is true if and only if  $\Phi \urcorner$ . However, no consistent theory of at least a certain limited complexity can contain its own truth theory. So, given the consistency and complexity of  $Th$ , it will not contain its own truth theory. That is, there will be a sentence  $S$  such that  $Th$  does not assert a T-sentence for  $S$ . Thus, if (P2) is correct, then  $Th$  is not adequate.

Can one augment  $Th$  by its truth theory to produce a new theory  $Th^*$  which then has a chance of being adequate? If (P2) is correct, one cannot.

---

<sup>25</sup>Or at least it refers to objects which can encode these.

$Th^*$  will need to contain its own truth theory. But  $Th^*$  will be of even greater complexity than  $Th$ . So, the same problems will emerge for this theory. Thus, neither  $Th$  nor  $Th^*$  is adequate.

These considerations show that if (P2) is correct, then there are no true and adequate theories. The deficiency exhibited by the theory of Asian history and by the theory of European history is universal. It is open to the maximalist to concede this point: there are no adequate theories. All theories are deficient. But this response strikes me as problematic. If *inadequacy* is a deficiency, there ought to be a corresponding virtue which a theory could in principle achieve. The inadequacy of a theory, it seems to me, has at least some implications for what a theorist should be doing. For instance, a theorist who believes that there is no reason to inquire about anything other than, say, European history can be faulted. At any rate, it is a misfortune that the horizon of her curiosity is so limited. It is a misfortune, since her theory will inevitably miss out on interesting features of the world. There is research which she could do which would remedy this deficiency. But what of a theory which leaves out its own truth theory, or a theorist who is uninterested in the truth theory of her own theory? Is this theory or theorist subject to the same criticism? There may have been an initial temptation to believe that the cases were on a par. But the Tarskian considerations show that it is too demanding to require a theory to contain its own truth theory. A theory can be faulted for leaving out claims about various geographical locations, but not for leaving out its own truth theory.

It is tempting to think that my argument turns on problems with giving a T-theory for one's home language and can be avoided by appealing more narrowly to *empirical linguistics*. Perhaps one is obliged only to formulate a standard semantics for sentences expressing *alien* theories, but not required to formulate a standard semantics for the sentences expressing one's home theory. This response would involve relaxing (P2) so as to require only that a theory include a standard semantics for sentences expressing other theories, not the original theory itself.

I fully admit that it is sometimes easier to formulate a standard semantics for the sentences expressing a different theory than it is to formulate a standard semantics for those expressing one's home theory. It is easier, in particular, to formulate a standard semantics for sentences expressing a *weaker theory*. As a general matter however, theories expressed in other languages needn't be weaker than one's home theory. A theory expressed in English and one expressed in German will presumably have to meet the same requirements to be adequate. If adequacy requires the English theory to offer a compositional, truth-theoretic semantics for the German theory and requires the German theory to offer a compositional, truth theoretic semantics for the English theory, then the requirement of adequacy again raises the specter of paradox. Moreover, if a theory is not required to formulate a standard semantics for the sentences which express it, then it is unreasonable to require a standard semantics for all alien sentences. If for instance, the NP-theorist cannot be faulted for failing to provide a T-theory for her own theory, she can hardly be

faulted for failing to provide a T-theory for the stronger theory endorsed by ordinary English speakers.

I have thus far used Tarskian considerations to respond to an argument in favor of maximalism. These considerations can be extended to raise problems for maximalism itself. Namely, maximalism itself leads to the conclusion that no theory is adequate. The crucial insight is that any consistent theory which is a candidate for being adequate cannot contain its own truth theory. So if  $Th$  is both wholly true (and therefore consistent) and adequate, then there must be a true claim  $\Phi$  in the language of  $Th$  such that  $Th$  does not include its T-sentence:

(**T**)  $\Phi$  is true if and only if  $\Phi$ .

It follows from the maximalist view that (T) is not true. This puts the maximalist in an awkward position. By our assumption,  $\Phi$  is in  $Th$ . So the maximalist has to admit that  $\Phi$  is true. Presumably, the maximalist herself aims at an adequate theory. Given that she says that  $\Phi$  is true and believes that a theory should include every true claim, she should also include  $\Phi$  itself in her theory. So, the maximalist seems to be committed to (i)  $\Phi$ , (ii) that  $\Phi$  is true and (iii) that it's untrue that  $\Phi$  is true if and only if  $\Phi$ . I therefore believe that maximalism is implausible.

I hesitate to say that the view is refuted beyond a shadow of a doubt because the current problem looks like the Liar paradox, and surely the Liar

has a solution, even if we don't know what it is. The crucial point is that not just any solution to the Liar translates into help for the maximalist. Maximalism entails that every claim in a satisfactory theory has a truth-value and that every truth is in this theory. There's no prior reason to think that a solution to the paradox is compatible with the existence of such a theory. Most standard responses to the Liar paradox, including Kripke's fixed-point construction, type theories and contextual theories all involve stepping back from the view that one's theory must include all and only the truths.<sup>26</sup> To provide one illustration, type theories involve giving up the idea that there is a single truth predicate in favor of various sorted truth predicates which apply to different levels of discourse. They also prohibit one from expressing the disjunction of these various truth predicates. On such a view, the thesis of maximalism becomes impossible to express, for one cannot say that a theory must get all of the truths *simpliciter*. Rather, one can say only that a theory must get all of the truths of a certain kind. If one accepts the view offered by Eklund, Hawthorne and McGrath, then these standard responses do not work. In my view, it is best to avoid these complications and accept a different account of adequacy.

---

<sup>26</sup>For paradoxes resulting from vagueness, Hawthorne (2006c) suggests that it may be indeterminate whether a given claim is in a theory. He might similarly suggest that an adequate theory should be such that it is indeterminate which claims from its truth theory it includes.

## 5.6 Adequacy as Ontology

If one grants the assumption that a theory can leave out some fine-grained truths and still be adequate, then the conventionalists seem to be in a relatively strong position. Granted, their own conceptions of adequacy tend to rely on highly unpopular versions of verificationism or on views about modality which may seem naïve. Nonetheless, it is unlikely that the proponent of traditional metaphysics can offer a criterion of adequacy which is uniquely satisfiable. There will consequently be a variety of true and adequate theories. If these theories don't agree in their ontology, then conventionalism threatens. Is there another plausible account of adequacy which renders the possibility that these multiple true and adequate theories differ in their ontologies highly unlikely or impossible?

I want to suggest that there is. According to my view – the ontological view of adequacy – adequacy *consists in* getting the right ontology. Thus, if two theories have different ontologies, then one of them is not adequate. I think that there is something intuitive about this idea. The goal of inquiry is to get at the world, to describe all of the chunks of reality. Reality has a fixed domain of contents which theorists aim to characterize. One achieves all of the goals of inquiry when one's theory identifies and characterizes the items in this domain.

The interesting question is whether this view is tenable. I will briefly respond to two potential objections to my view, both purporting to issue from strict adherence to Quine's criterion, but which put contradictory spins on

it. According to one objection, ontological differences between theories may play a role in whether they are adequate, but ontological correctness is too easy and therefore cannot be sufficient for adequacy. According to the more serious objection, ontological correctness is too difficult, and therefore cannot be a necessary condition for adequacy. This latter objection reveals which premise in the argument for conventionalism I must reject: (The Ubiquity of Ontological Differences). This premise says that two theories rarely or never agree in their ontology. As against this thesis, I will maintain that distinct theories can have the same ontology.

Some philosophers endorse Armstrong's<sup>27</sup> view according to which Quine's criterion entails that "predicates do not have to be taken seriously in considering the ontological implications of the statements one takes to be true." For instance, Josh Parsons approvingly cites Armstrong's remarks and adds,

[A]ccording to Quine's criterion of ontological commitment, to say 'There is a red surface' commits us to no more things than 'There is a surface' commits us to.<sup>28</sup>

According to this view, a theory's ontology is not affected by the predicates used to express the theory. Presumably then, ontology amounts to nothing more than cardinality. If the worlds in which with one theory is true contain the same number of things as the worlds in which with another theory is true,

---

<sup>27</sup>Armstrong (1989), p. 89.

<sup>28</sup>Parsons (1999), pp. 327.

then the two theories have the same ontology.<sup>29</sup> But surely whether a theory is adequate turns on more than just the cardinality constraints it imposes on the world. It is fairly easy for a theory to impose the correct cardinality constraints. All it needs to do is to state which objects are identical to which other objects (or which functions exist). But an adequate theory must do more than this. It must sufficiently characterize the objects it posits. A theory which asserts the existence of various individuals but fails to say whether they are people, atoms or numbers leaves out important information about the world.

This objection rests on a gravely mistaken view of ontology. Consider the claims expressed by the sentences ‘there are abstract things’ and ‘there are concrete things’. These claims should generate distinct ontological commitments: one to abstract things and the other to concrete things. However, if Parsons’ schema is correct, the ontological commitments generated by either of these sentences should be the same as those generated by the claim expressed by ‘there are things’. But this is wrong. These two sentences clearly generate different ontological commitments.

One source of this confusion is that the idioms ‘theory T is ontologically committed to  $\Phi$ s’ and ‘ $\Phi$ s are in the ontology of theory T’ are liable to be misleading. It is tempting to treat them extensionally so that two inferences appear valid. The inference from the claim that a theory is committed to  $\Phi$ s to the claim that there are  $\Phi$ s to which the theory is committed may appear

---

<sup>29</sup>Alternatively, one might think that a theory is adequate if and only if all of its models have a certain cardinality.

valid, as can the inference from the claim that a theory is committed to  $\Phi$ s and the claim that  $\Phi$ s are all  $\Psi$ s to the claim that the theory is committed to  $\Psi$ s.

Quine takes great pains in 'On What There Is' to undermine each temptation; in fact a central purposes of the paper is to explain how one can attribute ontological commitments to a theory one disagrees with.<sup>30</sup> One can see that the first inference is invalid when one reflects on the fact that a theory can ontologically commit to electrons in general without there being any particular electrons it commits to, or can commit to unicorns even though there are none at all. Similarly, theories which say that there are unicorns or that there are trolls incur ontologies of unicorns and of trolls respectively. Now it just so happens that there are no unicorns and no trolls, so all unicorns are trolls; both categories are empty. But it's a mistake to attribute to a theory an ontological commitment to trolls, merely because it says that there are unicorns.

This point raises another confusion which has drawn philosophers to conflate a theory's ontology with the constraints it imposes on the world's cardinality. Quine correctly distinguishes a theory's ontology from its ideology. He invokes this distinction against philosophers such as Gustav Bergmann who held that if a theory says that there are red things, then it is ontologically committed to properties such as the property of being red. Quine held that

---

<sup>30</sup>Quine (1999b).

this inference was illegitimate. But it's a mistake to argue on this basis that a theory which says that there are red things has no ontological differences from one which leaves this claim out. After all, a theory which includes this claim has *red things* in its ontology whereas a theory which leaves the claim out does not.

The thesis that different theories nearly invariably differ in their ontologies creates a second, more serious, challenge to the view that adequacy requires getting the right ontology. I argued above that if Quine's criterion is correct, then any two theories differ in their ontologies. If this is right, then any wholly true theories which get the ontology right will be identical.

Even worse, if Quine's criterion is correct, then a theory must include all of the truths to have the correct ontology. Recall that Quine thinks that a theory has  $\Phi$ s in its ontology just in case it says that there are  $\Phi$ s. The ontological commitment is correct just in case there really are  $\Phi$ s. Suppose that there is some truth  $\Psi$  which the theory omits. Then there will be things such that  $\Psi$ , but these won't be in the theory's ontology. Its ontology will not include things such that  $\Phi$  even though there are such things. So, the theory fails to have an ontological commitment which it should have. Thus, it won't be adequate.

Quine's criterion therefore conflicts with my rejection of the view that an adequate theory needs to contain all of the truths. But, this is just a reason to jettison Quine's criterion, understood in this strict manner. There is a long tradition in philosophy which I will call *ontological reductionism*.

According to this view, claims such the claim expressed by ‘there are Fs’ generate ontological commitments. However, in the presence of other claims about Fs – about whether they are real, whether they are entities, or whether they exist – these commitments can be defeated. That is, the ontology which these claims commit to can be “reduced” to an underlying ontology. For a theory to ontologically commit to Fs is for it to assert that there are Fs and not offer a reduction for them.

Kit Fine (2009) has prominently defended views which make room for reductionism of this sort. According to Fine, a theory which says that there are items of a certain kind – say nations – needn’t have them in its ontology. To avoid the commitment, the theory needs to include that additional claim<sup>31</sup> that nations aren’t “parts of reality.” Fine’s is one of many recent theories which attempt to make room for some conception of ontological reductionism.<sup>32</sup>

An interesting consequence for this view is that there are two ways a theory can be inadequate. Recall that according to the ontological account of adequacy a theory is inadequate if it does not have the right ontology. If reductionism is the correct account of ontological commitment, then there are two ways a theory can get the ontology wrong. A theory can have too little ontology. But a theory can also have too much ontology. It may have ontological commitments which don’t correspond to bits of reality. If this

---

<sup>31</sup>Related issues are discussed in Fine (2001).

<sup>32</sup>The recent deployment of the ideal language method in Dorr (2005) and Sider (2009) can be seen as attempts to allow for ontological reductions.

happens, then the theory must be expanded to reduce out the extraneous commitments.

## 5.7 Conclusion

I have argued that the the goal of inquiry which I have called adequacy is intimately connected to the project of ontology; having an adequate theory just amounts to succeeding in the project of ontology. The most interesting consequence of my view is that it rules out conventionalism about ontology. If I am right, then the goal of getting the ontology right is built into the very goals of theory construction. If two theories are equally successful, then they must have the same ontology.

This stands in sharp contrast to the view of the conventionalists who believe that the mere fact that there are multiple theories of the world is some sort of threat to ontology. The conventionalists are entirely correct to believe that the world may have many adequate descriptions. However, they are wrong to suppose that these descriptions may have different ontologies. Having the same ontology is what makes them adequate.

## Bibliography

- Alston, William P. 1958. "Ontological Commitments." *Philosophical Studies* 9:8–17.
- Arsmtrong, D. M. 1989. *Universals: An Opinionated Introduction*. Boulder, CO: Westview Press.
- . 1997. *A World of States of Affairs*. New York, NY: Cambridge University Press.
- Ayer, A. J. 1959. *Logical Positivism*. New York, NY: The Free Press.
- Azzouni, Jody. 2004. *Deflating Existential Consequence: A Case for Nominalism*. Oxford, UK: Oxford University Press.
- Baxter, Donald. 1988. "Identity in the Loose and Popular Sense." *Mind* 97:552–582.
- Bedou, Mark and Humphreys, Paul. 2008. *Emergence: Contemporary Readings in Philosophy and Science*. Cambridge, MA: MIT Press.
- Bennett, Karen and McLaughlin, Brian. 2005. "Supervenience." In Zalta (2005).
- Bergmann, Gustav. 1992. *New Foundations of Ontology*. Madison, WI: The University of Wisconsin Press.

- Boghossian, Paul. 1997. "Analyticity." In Hale and Wright (1997), 331–368.
- Bonevac, Daniel. 1982. *Reduction in the Abstract Sciences*. Indianapolis, IN: Ridgeview Pub Co.
- . 1984. "Systems of Substitutional Semantics." *Philosophy of Science* 51:631–656.
- . 1995. "Reduction in the Mind of God." In Savellos and Yalcine (1995), 124–139.
- Boolos, George. 1998a. *Logic, Logic, and Logic*. Cambridge, MA: Harvard University Press.
- . 1998b. "To Be is To Be the Value of a Variable (Or to Be Some Values of Some Variables)." In Boolos (1998a), 54–73.
- Bottani, Andrea, Carrara, Massimiliano, and Giaretta, Pierdaniele. 2002. *Individuals, Essence, and Identity*. Boston, MA: Kluwer Academic Publishers.
- Burgess, John. 2008a. "Being Explained Away." In Burgess (2008c), 85–103.
- . 2008b. "Mathematics and Bleak House." In Burgess (2008c), 46–65.
- . 2008c. *Mathematics, Models, and Modality*. New York, NY: Cambridge University Press.
- Burgess, John and Rosen, Gideon. 1997. *A Subject with No Object*. Oxford, UK: Clarendon Press.

- . 2005. “Nominalism Reconsidered.” In Shapiro (2005), 515–535.
- Cameron, Ross. 2008. “Truthmakers and ontological commitment: or how to deal with complex objects and mathematical ontology without getting into trouble.” *Philosophical Studies* 140:1–18.
- . 2009a. “How to Have a Radically Minimal Ontology.” *Philosophical Studies* (*Online First*) .
- . 2009b. “Quantification, Naturalness and Ontology.” In Hazlett (2009), 8–28.
- Carnap, Rudolph. 1936. “Testability and Meaning.” *Philosophy of Science* 3:419–471.
- . 1959. “Psychology in Physical Language.” In Ayer (1959), 165–198.
- . 1987. “On Protocol Sentences.” *Nous* 21:457–470.
- . 1988a. “Empiricism, Semantics, and Ontology.” In Carnap (1988b), 205–221.
- . 1988b. *Meaning and Necessity*. Chicago, IL: The University of Chicago Press.
- . 2002. *The Logical Syntax of Language*. Chicago, IL: Open Court Publishing.
- . 2003. *The Logical Structure of the World and Pseudoproblems in Philosophy*. Chicago, IL: Open Court Publishing.

- Causey, Robert. 1988. *Unity of Science*. Hingham, MA: Riedel Publishing Company.
- Chalmers, David. 2009. "Ontological Anti-Realism." In David Chalmers (2009), 77–129.
- Chihara, Charles. 1973. *Ontology and the Vicious Circle Principle*. Ithaca, NY: Cornell University Press.
- Church, Alonzo. 1958. "Ontological Commitment." *The Journal of Philosophy* 55:1008–1014.
- Coffa, J. Alberto. 1993. *The Semantic Tradition from Kant to Carnap*. New York, NY: Cambridge University Press.
- Creath, Richard (ed.). 1990. *Dear Carnap, Dear Van: The Quine-Carnap Correspondence and Related Work*. Los Angeles, CA: University of California Press.
- David Chalmers, Ryan Wasserman, David Manley. 2009. *Metametaphysics*. Oxford: Oxford University Press.
- Davidson, Donald. 2001a. *Essays on Action and Events*. Oxford, UK: Clarendon Press.
- . 2001b. "Mental Events." In Davidson (2001a), 207–228.
- . 2001c. "Psychology as Philosophy." In Davidson (2001a), 229–234.

- Dorr, Cian. 2005. "What We Disagree about when We Disagree About Ontology." In Kalderon (2005), 234–286.
- . 2010. "Review of *Everything Must Go: Metaphysics Naturalized*." *Notre Dame Philosophical Reviews* .
- Dummett, Michael. 1978a. "Nominalism." In Dummett (1978b), 38–49.
- . 1978b. *Truth and Other Enigmas*. Cambridge, MA: Harvard University Press.
- Dunn, J. Michael. 1987. "Relevant Predication - 1." *Journal of Philosophical Logic* 16:347–381.
- . 1990. "Relevant Predication -2." *Philosophical Studies* 66:177–206.
- Eklund, Matti. 2005. "Fiction, Indifference, and Ontology." *Philosophy and Phenomenological Research* 71:557–579.
- . 2006. "Neo-Fregean Ontology." *Philosophical Perspectives* 20:95–121.
- . 2007. "The Picture of Reality as an Amorphous Lump." In Sider et al. (2007), 382–396.
- . 2009. "Carnap and Ontological Pluralism." In David Chalmers (2009), 130–156.
- Field, Hartry. 1980. *Science without Numbers*. Oxford: Basil Blackwell Publisher.

- . 1982. “Realism and Relativism.” *The Journal of Philosophy* 79:553–567.
- Fine, Kit. 2001. “The Question of Realism.” *Philosopher’s Imprint* 1:1–30.
- . 2009. “The Question of Ontology.” In David Chalmers (2009), 157–177.
- Fodor, Jerry. 1999. “Special Sciences.” In Kim and Sosa (1999), 504–514.
- Friedman, Micheal and Creath, Richard. 2007. *The Cambridge Companion to Carnap*. Cambridge, UK: Cambridge University Press.
- Gale, Richard. 2002. *Blackwell Guide to Metaphysics*. Malden, MA: Blackwell Publishers.
- Gillett, Carl. 2007. “Understanding the New Reductionism: The Metaphysics of Science and Compositional Reduction.” *Journal of Philosophy* 104:193–216.
- Hale, Bob and Wright, Crispin. 1997. *Blackwell Companion to the Philosophy of Language*. Oxford: Blackwell Publishers.
- Hawthorne, John. 2006a. *Metaphysical Essays*. Oxford: Oxford University Press.
- . 2006b. “Plenitude, Convention, Ontology.” In Hawthorne (2006a), 53–84.
- . 2006c. “Vagueness and the Mind of God.” In Hawthorne (2006a), 165–184.
- . 2009. “Superficialism in Ontology.” In David Chalmers (2009), 213–230.

- Hazlett, Allan. 2009. *New Waves in Metaphysics*. Palgrave Macmillan.
- Hempel, Carl. 2001. "Reduction: Ontological and Linguistic Facets." In Hempel and (ed.), 189–207.
- Hempel, Carl and (ed.), James Fetzer. 2001. *The Philosophy of Carl Hempel: Studies in Science, Explanation, and Rationality*. Oxford: Oxford University Press.
- Hirsch, Eli. 1993. *Dividing Reality*. New York, NY: Oxford University Press.
- . 2002. "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.
- . 2008. "Language, Structure, Ontology." *Nous* 42:509–528.
- Hoffweber, Thomas. 2006. "Inexpressible Properties and Propositions." In Zimmerman (2006), 155–206.
- Horgan, Terence. 1993. "From Supervenience to Superdupervenience." *Mind* 102:555–586.
- Hylton, Peter. 1990. *Russell, Idealism and the Emergence of Analytic Philosophy*. Oxford, UK: Clarendon Press.
- Kalderon, Mark. 2005. *Fictionalism in Metaphysics*. Oxford, UK: Clarendon Press.

- Kim, Jaegwon. 1993a. "Concepts of Supervenience." In Kim (1993d), 53–78.
- . 1993b. "The Myth of Nonreductive Materialism." In Kim (1993d), 265–284.
- . 1993c. "'Strong' and 'Global' Supervenience Revisited." In Kim (1993d), 79–91.
- . 1993d. *Supervenience and Mind*. Cambridge: Cambridge University Press.
- . 2000. *Mind in a Physical World*. Cambridge, MA: The MIT Press.
- Kim, Jaegwon and Sosa, Ernest. 1999. *Metaphysics: An Anthology*. Malden, MA: Blackwell Publishing.
- Lewis, David. 1999a. "New Work for a Theory of Universals." In Lewis (1999b), 8–55.
- . 1999b. *Papers on Metaphysics and Epistemology*. Cambridge, MA: Oxford University Press.
- . 1999c. "Putnam's Paradox." In Lewis (1999b), 56–77.
- . 2005. "Quasi-Realism is Fictionalism." In Kalderon (2005), 314–321.
- MacDonald, Cynthia. 1995. "Psychophysical Supervenience, Dependency, and Reduction." In Savellos and Yalcine (1995), 140–157.
- Makin, Gideon. 2000. *The Metaphysicians of Meaning*. New York, NY: Routledge.

- Maudlin, Tim W E. 2006. “Completeness, Supervenience and Ontology.” *Journal of Physics A: Mathematical and Theoretical* 40:3151–3171.
- McDaniel, Kris. 2009. “Ways of Being.” In David Chalmers (2009), 290–319.
- . 2010. “A Return to the Analogy of Being.” *Philosophy and Phenomenological Research (Online First)* .
- McGrath, Matthew. 2008. “Conciliatory Metaontology and the Vindication of Common Sense.” *Nous* 42:482–508.
- McLaughlin, Brian. 1995. “Varieties of Supervenience.” In Savellos and Yalcine (1995), 16–59.
- . 2008a. “Emergence and Supervenience.” In Bedou and Humphreys (2008), 19–60.
- . 2008b. “The Rise and Fall of British Emergentism.” In Bedou and Humphreys (2008), 19–60.
- Merricks, Trenton. 2001. *Objects and Persons*. Oxford: Clarendon Press.
- Moltmann, Friederike. 2003. “Nominalizing Quantifiers.” *Journal of Philosophical Logic* 32:4445–481.
- Nagel, Thomas. 1961. *The Structure of Science: Problems in the Logic of Explanation*. New York, NY: Harcourt, Brace and World.
- Neurath, Otto. 1959. “Protocol Sentences.” In Ayer (1959), 199–208.

- Parsons, Josh. 1999. "There Is No 'Truthmaker' Argument Against Nominalism." *Australasian Journal of Philosophy* 77:325–334.
- Parsons, Terence. 1982. "Are There Nonexistent Objects?" *The American Philosophical Quarterly* 19:365–371.
- Pickel, Bryan. 2010. "There Is No 'Is' of Constitution." *Philosophical Studies* 147:193–211.
- Priest, Graham. 2005. *Towards Non-Being*. New York, NY: Oxford University Press.
- Putnam, Hilary. 1981a. *Reason, Truth and History*. Cambridge: Cambridge University Press.
- . 1981b. "Two Philosophical Perspectives." In Putnam (1981a), 49–74.
- . 1983a. "Equivalence." In Putnam (1983b), 26–45.
- . 1983b. *Realism and Reason*. Cambridge: Cambridge University Press.
- . 1983c. "Why There Isn't a Ready-Made World." In Putnam (1983b), 205–228.
- . 1992a. *Realism with a Human Face*. Cambridge, MA: Harvard University Press.
- . 1992b. "Truth and Convention." In Putnam (1992a), 96–104.
- . 1994a. "The Question of Realism." In Putnam (1994b), 205–228.

- . 1994b. *Words and Life*. Cambridge, MA: Harvard University Press.
- Quine, W. V. O. 1939. "Designation and Existence." *The Journal of Philosophy* 36:701–709.
- . 1960. *Word and Object*. Cambridge, MA: The MIT Press.
- . 1969a. "Existence and Quantification." In Quine (1969b), 91–113.
- . 1969b. *Ontological Relativity and Other Essays*. New York, NY: Columbia University Press.
- . 1976a. "Carnap and Logical Truth." In Quine (1976d), 107–132.
- . 1976b. "Carnap's Views on Ontology." In Quine (1976d), 203–211.
- . 1976c. "A Logistical Approach to the Ontological Problem." In Quine (1976d), 197–202.
- . 1976d. *The Ways of Paradox and Other Essays*. Cambridge, MA: Harvard University Press.
- . 1986. *Philosophy of Logic*. Cambridge, MA: Harvard University Press.
- . 1999a. *From a Logical Point of View*. Cambridge, MA: Harvard University Press.
- . 1999b. "On What There Is." In Quine (1999a), 1–19.
- . 1999c. "Reference and Modality." In Quine (1999a), 139–159.

- . 1999d. “Reification of Universals.” In Quine (1999a), 102–129.
- . 1999e. “Two Dogmas of Empiricism.” In Quine (1999a), 20–46.
- Rosen, Gideon and Dorr, Cian. 2002. “Composition as a Fiction.” In Gale (2002), 151–174.
- Routley, Richard. 1982. “On What There Is Not.” *Philosophy and Phenomenological Research* 43:151–177.
- Russell, Bertrand. 1989. “Philosophy of Logical Atomism.” In Russell and (ed.), 177–281.
- . 1996. *Principles of Mathematics*. New York, NY: W. W. Norton Company.
- Russell, Bertrand and (ed.), Robert Marsh. 1989. *Logic and Knowledge*. New York, NY: Routledge.
- Russell, Bertrand and Whitehead, Alfred North. 1957. *Principia Mathematica*. Cambridge: Cambridge University Press.
- Sainsbury, Mark. 1979. *Russell*. London: Routledge and Kegan Paul.
- Sainsbury, R. M. 2010. *Fiction and Fictionalism*. London: Routledge.
- Savellos, Elia and Yalcine, Imit. 1995. *Supervenience: New Essays*. Cambridge, UK: Cambridge University Press.
- Schaffer, Jonathan. 2008. “Truthmaker Commitments.” *Philosophical Studies* 141:7–19.

- Shapiro, Stewart. 2005. *Oxford Handbook of Philosophy of Mathematics and Logic*. Oxford: Oxford University Press.
- Sider, Theodore. 2009. "Ontological Realism." In David Chalmers (2009), 384–423.
- . MS. "Against Parthood." Available at <http://tedsider.org/>.
- Sider, Theodore, Hawthorne, John, and Zimmerman, Dean (eds.). 2007. *Contemporary Debates in Metaphysics*. Malden, MA: Blackwell Publishers.
- Smart, J. J. C. 1959. "Sensations and Brain Processes." *The Philosophical Review* 68:141–156.
- Stanley, Jason. 2001. "Hermeneutic Fictionalism." *Midwest Studies in Philosophy* 25:36–71.
- Stebbing, L. S. 1932. "The Method of Analysis in Metaphysics." *Proceedings of the Aristotelian Society* 33:65–94.
- Uebel, Thomas. 2007. "Carnap and the Vienna Circle." In Friedman and Creath (2007), 153–175.
- Urmson, J. O. 1971. *Philosophical Analysis: Its Development Between the Two World Wars*. New York, NY: Oxford University Press.
- van Fraassen, Bas. 1980. *The Scientific Image*. Oxford: Oxford University Press.

- van Inwagen, Peter. 1990. *Material Beings*. Ithaca, NY: Cornell University Press.
- . 2001a. “Composition as Identity.” In van Inwagen (2001c), 95–110.
- . 2001b. “Metaontology.” In van Inwagen (2001c), 13–31.
- . 2001c. *Ontology, Identity, Modality*. Cambridge: Cambridge University Press.
- . 2009. “Being, Existence, and Ontological Commitment.” In David Chalmers (2009), 472–506.
- Varzi, Achille. 2002. “Words and Objects.” In Bottani et al. (2002), 49–75.
- Wisdom, John. 1931. “Logical Constructions (I).” *Mind* 40:188–216.
- . 1933. “Logical Constructions (IV).” *Mind* 42:43–66.
- Wright, Crispin. 1983. *Frege’s Conception of Numbers as Objects*. Aberdeen, Scotland: Aberdeen University Press.
- . 1992. *Truth and Objectivity*. Cambridge, MA: Harvard University Press.
- Yablo, Stephen. 1998. “Does Ontology Rest on a Mistake.” *Aristotelian Society* 72:229–261.
- Zalta, Ed. 2005. *The Stanford Encyclopedia of Philosophy*. MIT Press.
- Zimmerman, Dean. 2006. *Oxford Studies in Metaphysics Volume II*. Oxford, UK: Oxford University Press.

## Vita

Bryan Pickel was born in St. Louis, Missouri on November 13, 1982. He was raised in Tampa, Florida. He received a B.S. in Mathematics and a B.A. in Philosophy and the Plan II Honors Program at the University of Texas in May, 2004. Since August 2004, he has been a graduate student at the University of Texas.

Permanent address: 4616 Triangle Ave. Apt. 4110  
78751 Austin, TX

This dissertation was typeset with  $\text{\LaTeX}^\dagger$  by the author.

---

<sup>†</sup> $\text{\LaTeX}$  is a document preparation system developed by Leslie Lamport as a special version of Donald Knuth's  $\text{\TeX}$  Program.