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Being Something: Prospects for a Property-Based Approach to
Predicative Quantification

By

Michael Olivier Rieppel

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requirements for the degree of
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in

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of the

University of California, Berkeley

Committee:

Professor John Campbell, Co-Chair
Professor John MacFarlane, Co-Chair
Professor Line Mikkelsen

Spring, 2013

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Predicative Quantification

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Abstract

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Doctor of Philosophy in Philosophy

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Professor John Campbell, Co-Chair
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Few questions concerning the character of our talk about the world are more basic than how predicates combine with names to form truth-evaluable sentences. One particularly intriguing fact that any account of predication needs to make room for is that natural language allows for quantification into predicate position, through constructions like ‘She is everything one might hope to be: healthy, wealthy, and wise’. A natural and initially plausible view has it that predicates function to denote properties, and that such predicative quantifiers accordingly quantify over properties. This approach faces immediate difficulties, however.

After all, properties are objects of a certain sort, quantified over in nominally quantified sentences like ‘Steel has some properties aluminum lacks’. Indeed, properties seem precisely not to be what predicative quantifiers quantify over: although happy is something Oscar is, the property of being happy surely isn’t. Further, if predicative quantifiers quantify over properties, they presumably carry ontological commitment to properties. But for it to be the case that there is something Oscar is, it suffices that he be happy, or morose, or loquacious. And surely the claim that Oscar is, say, loquacious does not commit us to properties. The vehicles for such commitment, it seems, are once again nominally quantified sentences like the one given above.

I begin by asking what a nominalist alternative to the property-based approach might look like, and proceed to develop what I term the Ockhamist Account on the nominalist’s behalf. This Ockhamist Account, however, derives its primary appeal from the apparent shortcomings of the property-based view. The remainder

of the dissertation investigates whether the problems that initially appear to beset the property-based view do indeed undermine it.

I argue that first worry mentioned above doesn't force us to deny that predicative quantifiers quantify over properties, but should rather lead us to recognize that an expression has semantically relevant features beyond what it denotes. In particular, I argue that we can explain the truth conditional difference between pairs like 'Oscar is happy' and 'Oscar is the property of being happy' by distinguishing the semantic relations predicative and nominal expressions bear to their semantic values: whereas nominal expressions like 'the property of being happy' refer to properties, predicates express or ascribe them. This lets us construe the difference between predicative quantification and nominal quantification over properties not in terms of what is quantified over, but in terms of the semantic relation the bound variables bear to their values.

I next turn to substitution failures involving adjective nominalizations, like the one exhibited by 'Wisdom is admirable' and 'The property of being wise is admirable'. As I show, once we allow that the semantically relevant features of an expression aren't exhausted by what semantic value it has, we needn't take such cases to demonstrate that 'wisdom' fails to have the property of being wise as its semantic value, any more than we need to deny that 'happy' has the property of being happy as its semantic value.

The proposal also offers us a compelling response to the problem about ontological commitment. I argue that the objection conflates the question of whether a given quantifier quantifies over certain things with the question of whether the expressions into the position of which it quantifies refer to those things. The view I defend lets us disentangle these two issues, and shows that we can construe predicative quantifiers as quantifying over properties while still acknowledging that the expressions into the position of which they quantify fail to name, or refer to, those properties.

I conclude by considering the problem that Russell's Paradox poses for the property-based view. I canvas various strategies for responding to the threat of the paradox, but also register some reservations about each. I also offer some reasons for thinking that the Ockhamist Account is not entirely free from difficulties in this area, however. The problems raised by Russell's Paradox therefore point to the need for further refinement on both ends, rather than showing that one account must be abandoned in favor of the other.

To the memory of my grandmother Yvonne.
Sok csók.

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1 Introduction

1.1 Two Kinds of Generality

In the *Sophist*, Plato observes that in using a sentence, one doesn't just name things, but also says something about those things, by, as he put it, "weaving verbs with names." The question of how to understand the contrast between nominal and predicative expressions, and how the two combine to form truth-evaluable sentences, has been with us ever since.

Views on this question tend to divide into two broad camps. On the one hand, most semanticists, arguably following Plato's lead, have found it natural to adopt a realist position, on which the linguistic distinction between nominal and predicative expressions is construed in terms of a complementary ontological distinction: whereas nominal expressions denote individual *objects*, predicative expressions denote *properties* that those objects can have or fail to have. A subject-predicate sentence like 'Oscar is happy' is true just in case the individual denoted by 'Oscar' has the property denoted by 'happy'. A competing nominalist approach, prominently championed by Davidson, asks us to disabuse ourselves of this picture. An expression, it is urged, can be *meaningful* without *denoting* something. Properties may well exist, but appeal to them is simply otiose from the point of view of semantics: we can explain how a predicate manages to have a systematic impact on the truth conditions of any sentence in which it occurs without taking it that it denotes a property, or anything else for that matter.

The Davidsonian approach faces a considerable difficulty, however. According to Davidson, it is the presence of quantificational structure in sentences that introduces the need to regard sub-sentential expressions as denoting entities of some kind. "The issue of ontology," he writes, "is forced into the open only where the [semantic] theory find quantificational structure, and that is where the theory best

accounts for the pattern of truth dependencies by systematically relating expressions to objects” (Davidson, 1977). He takes it that this claim is not just compatible with anti-denotationalism about predicates, but positively supports the view. Thus, in the course of discussing Strawson’s contention that “in the sentences ‘Sally is pretty’ and ‘Betty is witty’ the words ‘pretty’ and ‘witty’ designate attributes,” Davidson commends Quine for pointing out that “if these words designated entities, it should be possible to quantify into the positions occupied by the words by substituting variables for the terms ‘pretty’ and ‘witty’ and binding the variables with quantifiers” (Davidson, 2005).

The trouble is that natural language in fact *does* allow us to quantify into the position of such predicative expressions. A simple subject-predicate sentence like ‘Oscar is happy’, for example, entails not just the nominally quantified (1.1a) but also the predicatively quantified (1.1b):¹

- (1.1) (a) Someone (namely Oscar) is happy.
 (b) Oscar is something (namely happy).

The Davidsonian nominalist encounters a *prima facie* difficulty here: if predicates do not denote anything, there is nothing for predicative quantifiers to quantify over, and so no obvious way to give a semantics for such quantifiers. The property-based approach, by contrast, appears to have a ready account to hand: if predicates denote properties, we can straightforwardly understand predicative quantifiers as quantifying over properties.

That we should be able to quantify into the position of predicative, and not just nominal, expressions is not particularly surprising from a syntactic point of view. After all, we can, for example, also place focus on either element of the sentence. Thus, while cleft constructions like

- (1.2) (a) It is *Oscar* who is happy.
 (b) *Oscar* is who is happy.

put the focus on the nominal expression ‘Oscar’, parallel constructions can be used to put the focus on the predicative expression ‘happy’:

- (1.3) (a) It is *happy* that Oscar is.

¹The ‘namely’-qualifiers here as elsewhere are intended only to indicate the intended nominal or predicative interpretation of the quantifiers. I don’t mean to suggest that the quantifier in (1.1a), for instance, is covertly referential (referring to Oscar) rather than quantificational.

(b) *Happy* is what Oscar is.

Similarly, either element can be targeted by a question, with the above focus constructions serving as natural ways to respond to those questions

(1.4) Q: Who is happy? / Who is it that is happy?

A: *Oscar* is who is happy.

(1.5) Q: What is Oscar? / What is it that Oscar is?

A: *Happy* is what Oscar is.

English also contains predicative pro-forms anaphorically related to previously occurring predicative expressions (as in the case of ‘happy’ and ‘that’ below), just as it contains pronouns anaphorically related to previously occurring nominal expressions (as in the case of ‘Oscar’ and ‘he’ below):

(1.6) Oscar is happy, and that’s what he ought to be given that he won the lottery.

Indeed, the possibility of predicative quantification is not peculiar to copular sentences like ‘Oscar is happy’, but can be reproduced with verbal predicates. Thus ‘Oscar ran’ entails not just ‘Someone ran’ but also

(1.7) (a) Oscar did something (namely run).

Predicatively quantified sentences furthermore follow not only from instances involving simple verbs and adjectives like ‘ran’ and ‘happy’, but also from instances involving more complex predicative phrases, like

(1.8) (a) Oscar is happy that he was served wine with dinner. So there is something Oscar is.

(b) Oscar ran back home before it started to rain. So Oscar did something.

Neither is the possibility of predicative quantification confined to the particular quantifier.² We can also form universally quantified sentences like

²I will often use the term ‘particular quantifier’ instead of ‘existential quantifier’ when discussing the quantificational expression ‘something’, so as not to preempt questions about the link between generality, on the one hand, and existence or ontological commitment on the other.

- (1.9) (a) Alice is everything one could hope to be: healthy, wealthy, wise etc.
 (b) Oscar did everything he had to do: take out the garbage, patch the roof, and alphabetize his record collection.

as well as sentences involving other kinds of determiners, besides ‘some’ and ‘every’, such as

- (1.10) (a) Most of what Oscar wants to be, Alice already is.
 (b) Alice did fewer things than Oscar did.

Finally, many of these quantifiers also crop up in the context of existential ‘there’ constructions like:

- (1.11) (a) There is something that Alice is and Oscar isn’t, but I can’t now recall what that is.
 (b) There are many things that Oscar does but Alice would never do.

Predicative quantification and related constructions are, in other words, fairly productive. As such, we can legitimately demand that our account of the nature of predication accommodate them. And as I’ve said, a property-based view of the semantic function of predicates appears to enjoy a considerable advantage over the nominalist alternative once we widen our gaze to take these constructions into account. Since the property theorist takes predicates to denote properties just as nominal expressions denote individuals, she can easily adapt her account of nominal quantification to cover the predicative case as well. The difference between the two kinds of quantifiers simply lies in a difference in what they quantify over: whereas the variables bound by nominal quantifiers take individual objects as their values, the variables bound by predicative quantifiers take properties as their values. The nominalist, on the other hand, who refuses to assign semantic values to predicates, can give us no answer to the question of what predicative quantifiers quantify over. And absent an answer to that question, it is highly unclear how we could give a semantics for such quantifiers. As we shall see momentarily, however, things aren’t quite as rosy for the property-based view as these initial considerations suggest.

1.2 Methodological Preliminaries

Before we look at the semantic proposal suggested by the property based view in more detail, let me make some initial methodological remarks. First, I will, for

the sake of simplicity, generally confine my attention to sentences like ‘Oscar is something’ that involve quantification into the postcopular position occupied by adjectives like ‘happy’ or indefinite noun phrases like ‘an ornithologist’. Cases like ‘Oscar did something’, which involve quantification into the position of a verb phrase, involve the insertion of a form of ‘do’ that agrees with the subject and carries information about tense, but that is absent from the non-quantified ‘Oscar ran’. This introduces an extra level of complexity which we avoid by sticking to the copular cases. I will therefore generally restrict my attention to a rather small fragment of English, one that only contains nominal expressions like ‘Oscar’, predicative expressions like ‘happy’ that can occur in postcopular position, and the quantificational resources needed to construct sentences like ‘Someone is happy’ and ‘Oscar is something’.

I will also assume that for semantic purposes, a simple copular sentence like ‘Oscar is happy’ can be represented as ‘Happy(oscar)’ with the copula ‘is’ left out (or if one prefers, represented through parentheses). This will let us represent the predicatively quantified ‘Oscar is something’ as having the form of ‘ $\exists X[X(\text{oscar})]$ ’, just as the nominally quantified ‘Someone is happy’ can be represented as having the form of ‘ $\exists x[\text{Happy}(x)]$ ’. This representation involves a certain degree of simplification, but I regard it as at least provisionally justified for several reasons. First, it will allow us to situate our discussion within the context of the extant philosophical literature on higher order logic. Second, the view that copular forms of ‘be’ are, though perhaps syntactically obligatory, semantically vacuous, is not terribly controversial, so the omission of the copula from our representation may be judged innocuous.³ Finally, although the copula is syntactically obligatory in standard English, many other languages allow its omission in certain contexts. In Hungarian, for example, ‘Oscar is happy’ would translate as ‘Az Oscar boldog’ (“the Oscar happy”) which does not include a form of ‘van’, the verb for ‘to be’ (i.e. one doesn’t say ‘Az Oscar van boldog’ or ‘Az Oscar boldog van’). Indeed, even English allows omission of the copula in embedded contexts—‘I consider Oscar happy’ is, for instance, just as grammatical as ‘I consider Oscar to be happy’—and some dialects of English allow its omission in unembedded contexts as well, as in e.g. ‘How you doing?’ or ‘Where you at?’⁴

There are, I should say, those who take exception to the claim that ‘ $\exists X[X(\text{Oscar})]$ ’ should count as a felicitous regimentation of the English ‘Oscar is something’, as well as to my practice of describing such sentences as involving *predicative* quan-

³See e.g. Mikkelsen (2008) and Heim and Kratzer (1998, §4.1).

⁴For extensive data on the distribution of the copula cross-linguistically see e.g. Pustet (2003).

tification. Wiggins (1984), for instance, insists that only copula-including expressions like ‘is a man’ (as opposed to ‘a man’) are “properly predicative”, and accordingly resists the thought that sentences like ‘ $(\exists\phi)(I \text{ am } \phi \text{ and you are not } \phi)$ ’, viz. a man (or an admirer of Hegel)’ involve genuinely *predicative* quantification (Wiggins, 1984, p. 317). Similarly, Dudman (1972b) suggests that ‘ $(\exists F)(F \text{ Socrates})$ ’ is incapable of being rendered in idiomatic English, except by recourse to “metalinguistic quantification over expressions” (Dudman, 1972b, fn. 4), again suggesting that he would not accept ‘Socrates is something’ — involving, as it does, a form of ‘to be’ — as an appropriate reading of his regimented sentence. Wiggins and Dudman seem to derive their conception of what counts as a genuine predicate from Frege, who explains his functional analysis of predicates as follows:

If, in an expression ... a simple or complex symbol occurs in one or more places, and we think of it as replaceable at all or some of its occurrences by another symbol (but everywhere by the same symbol), then we call the part of the expression that on this occasion appears invariant the function, and the replaceable part its argument.⁵

If we take Frege at his word here, we will have to agree that the part of ‘Oscar is happy’ which remains invariant through substitution of other expressions for ‘Oscar’ is the copula-including ‘is happy’, and not just the adjective ‘happy’.⁶

We will have opportunity to take a closer look at Frege’s views on predication in later chapters, so I will put off more detailed discussion until then. For now let me just make two points. First, Frege himself did not apply his criterion of predicativity as slavishly as Wiggins or Dudman seem to. Frege characterizes the copula as “a mere verbal sign of predication” whose content does not form “an essential part of the predicate”, and is accordingly happy to say that in the sentence ‘The Morning Star is a planet’, it is ‘a planet’ (rather than ‘is a planet’) which functions as the predicate or *Begriffswort* (Frege, 1892, p. 194). It stands to reason that Frege would therefore have been equally willing to regard sentences like ‘Oscar is something’ as involving genuinely predicative quantification, or as he would have put it, quantification over concepts. In support of Frege’s approach here, we might

⁵Frege (1879, §9).

⁶Though notice that Frege’s characterization is not entirely clear-cut, since it makes the function-argument structure dependent on which expression we “think of” as replaceable. If we think of ‘Oscar’ as replaceable, ‘is happy’ turns out to be the functional expression; if we think of ‘Oscar is’ as replaceable, ‘happy’ turns out to be the functional expression; if we think of ‘is happy’ as replaceable, ‘Oscar’ turns out to be the functional expression; and so on.

also once again note that it is only due to a parochial feature of English (and German) that the part of e.g. ‘The Morning Star is a planet’ which remains invariant through the imagined substitutions includes the copula. Second, and more importantly, whether we deem the sort of quantification exhibited in sentences like ‘Oscar is something’ worthy of the title “predicative quantification” is ultimately besides the point. Let me just stipulate that, whatever other authors may have intended to regiment through quantifiers like the one found in ‘ $\exists X[X(\text{Oscar})]$ ’, I will use such quantifiers to represent the natural language quantifier found in English sentences like ‘Oscar is something’. It is into the semantics of such quantifiers that I want to enquire, and such quantifiers that I mean to be speaking about when I speak of predicative quantifiers.

Finally, one more point about terminology. I have been, and will throughout, mark the contrast I’m interested in by talking about “nominal” versus “predicative” expressions, and correlatively, about nominal versus predicative quantifiers (understood as quantifiers that serve to quantify into the position of nominal and predicative expressions, respectively). In doing this, I run the risk of being misunderstood, especially at the nominal end of things. On one standard use, “nominal” is meant to mark out the class of *noun phrases*. This class, however, comprises a wider range of expressions than those I’m interested in, since it includes, *inter alia*, indefinite descriptions like ‘a planet’, quantificational expressions like ‘every planet’ or ‘several elephants’, and even predicative uses of ‘something’ and ‘everything’. When I speak of “nominal” expressions, I mean only to be picking out what have often been called “singular terms,” or “individual denoting” expressions, or “referring expressions.” By “predicative expressions,” by contrast, I mean what are often called “general terms,” or “property denoting” expressions, or expressions used to “describe” (rather than refer to) things. I prefer not to use these alternative characterizations because they demarcate the relevant classes in semantically loaded terms, whereas the present work is precisely directed at the question of what a proper semantic analysis of the expressions comprising these two classes ought to look like.

Of course, by abstracting away from syntactic and semantic criteria, we also introduce a certain degree of vagueness in where exactly the boundaries between the nominal and predicative are to be drawn (which isn’t to say that the semantically loaded characterizations will necessarily clarify the question). At this point, we can orient ourselves at the hand of paradigm examples. I will take proper names occurring in subject position as paradigm cases of nominal expressions, and adjectives occurring in postcopular position as paradigm cases of predicative expressions. Later, in Chapter 2, I will introduce some diagnostics to adjudicate more

difficult cases.

1.3 The Property-Based Account

A nominally quantified sentence like ‘Someone is happy’ involves quantification over individual people. Regimenting the sentence as ‘ $\exists x[\text{Happy}(x)]$ ’, we will say that it is true just in case at least one of the things quantified over is such that the embedded open sentence ‘ $\text{Happy}(x)$ ’ is true when the variable x is treated as denoting that thing. This talk of treating a variable as denoting something can be made formally precise by appealing to an assignment function that maps variables to individual objects, and then using that assignment function to define a denotation function that maps nominal expressions in general (i.e. both variables and nominal constants like ‘Oscar’) to individuals relative to such an assignment. Our semantic theory will thus include clauses like the following (with g being our assignment function):

$$\text{Den}^g(\text{'oscar'}) = \text{Oscar}$$

$$\text{for any nominal variable } v, \text{Den}(v)^g = g(v)$$

Variability in what a variable denotes to can now be modeled by the way in which the denotation of a variable changes as we shift the assignment function. To give the semantics of nominally quantified sentences, we allow the quantifier to shift the assignment, as follows:⁷

$\ulcorner \exists v \psi \urcorner$ is true on g iff there is some object a and assignment function g' such that $g'(v) = a$ and g' is otherwise like g , and ψ is true on g' .

Thus ‘ $\exists x[\text{Happy}(x)]$ ’ is, for example, true on g because ‘ $\text{Happy}(x)$ ’ is true relative to an assignment function g' that maps ‘ x ’ to Oscar, i.e. an assignment function g' such that $\text{Den}^{g'}(\text{'x'}) = \text{Oscar}$.

The guiding thought behind the property-based view is to more or less directly model the predicative case on the nominal case by, so to speak, slotting properties into the roles played by objects in our account of nominal quantification. The

⁷The condition that g' be “otherwise like” g is shorthand for: $\forall v'(v' \neq v \rightarrow g'(v') = g(v'))$. Here, as elsewhere, I state quantifier clauses in this way in order to facilitate comparison with the semantic clauses provided in Boolos (1985). Boolos’ semantics will be discussed in Chapter 1, when we consider the Ockhamist alternative to the property-based account.

predicatively quantified ‘Oscar is something’, it is claimed, involves quantification over properties. Regimenting the sentence as ‘ $\exists X[X(\text{oscar})]$ ’, we will say that it is true just in case at least one of the properties quantified over is such that the embedded open sentence ‘ $X(\text{oscar})$ ’ is true when the predicative variable ‘ X ’ is treated as denoting that property. We again make this formally precise by appeal to an assignment function that maps predicative variables to properties, which we use to define a denotation function that generally maps predicative expression to properties relative to such an assignment:

$\text{Den}^g(\text{‘Happy’}) = \text{the property of being happy}$

for any predicative variable Υ , $\text{Den}(\Upsilon)^g = g(\Upsilon)$

Given that predicates function to denote properties, atomic sentences are governed by the following clause:

$\ulcorner \phi(\alpha) \urcorner$ is true on g iff $\text{Den}(\alpha)^g$ instantiates $\text{Den}(\phi)^g$.

To get an account of predicatively quantified sentences, we allow the assignment function to vary in terms of which property it assigns to the predicative variable bound by the quantifier:

$\ulcorner \exists \Upsilon \psi \urcorner$ is true on g iff there is some property p and assignment function g' such that $g'(\Upsilon) = p$ and g' is otherwise like g , and ψ is true on g' .

The predicatively quantified ‘ $\exists X[X(\text{oscar})]$ ’ will then be true on g because ‘ $X(\text{oscar})$ ’ is true relative to an assignment function g' that maps ‘ X ’ to the property of being happy, given that Oscar does indeed instantiate that property.

1.4 Three Objections

The property-based account is no sooner formulated than problems begin to emerge, however. After all, properties are, broadly speaking, *objects* of a certain sort. *Abstract* objects, of course, but objects nevertheless, insofar as they are denoted by *nominal* expressions like ‘the property of being happy’ and quantified over in *nominal* quantified sentences like ‘Alice has some property Oscar lacks’. Our attempt to construe the difference between nominal and predicative quantification simply in terms of a difference in what the relevant quantifiers quantify over therefore doesn’t

seem to have adequately gotten at the evident semantic difference between properly predicative quantification and nominal quantification over properties. Indeed, on further reflection, properties look precisely *not* to be what predicative quantifiers quantify over: the claim that there is something Oscar is seems, if anything, to involve quantification over things Oscar might *be*, and although he might well be happy, he surely *isn't* the property of being happy.⁸ Properties, we in other words want to complain, are what we mention in specifying the truth of nominally quantified sentences like ‘Alice has some property Oscar lacks’; but they are not what we mention in specifying the truth of a predicatively quantified sentence like ‘Alice is something Oscar lacks’. The property-based account thus seems to have lost its grip on the fundamental difference between nominal and predicative quantification which we are seeking to explain in the first place.

A second, and related, worry one might have about the property-based approach arises from concerns about ontological commitment. Ever since Quine’s (1948) “On What There Is”, it has been standard practice to think of ontological commitment in terms of quantification. Very roughly, we ontologically commit ourselves to the things quantified over in the sentences we accept. This makes rather good sense. If I claim that someone is happy, I endorse a sentence that involves quantification over people, and I do indeed seem to ontologically commit myself to people, given that, if my claim is to be true, there must exist at least one person who is happy. But if predicative quantification involves quantification over properties, as the property-based account claims, then in accepting a predicatively quantified sentence like ‘Oscar is something’, I must be committing myself to the existence of a property Oscar has, just as my acceptance of ‘someone is happy’ commits me to the existence of a person who is happy. And surely that can’t be right! After all, for it to be the case that Oscar is something, it suffices that he be happy, or morose, or loquacious. And surely, it might be urged, the claim that Oscar is happy or morose or loquacious does not ontologically commit us to properties.

Of course, we certainly can involve ourselves in ontological commitment to properties. But the proper vehicles for such commitment, it seems, are once again *nominally* quantified sentences like ‘Alice has some property Oscar lacks’ rather than predicatively quantified sentences like ‘Alice is something Oscar is not’. Again: it is only in the former case that we mention a property when specifying

⁸Pryor (2007), for example, raises this sort of worry when he writes that in the case of the predicatively quantified ‘there is something both John and Kristen try to be: namely friendly’, it “looks like the semantic values that ‘something’ is ranging over are adjective-like values, rather than individuals. *Not even abstract individuals like properties*: what John and Kristen both try to be is not the property of being friendly” (p. 226; italics added).

what witnesses the truth of the quantified claim. In the latter case, we don't mention a property, nor, indeed, any *entity* at all. Predicative quantifiers thus don't seem to involve us in ontological commitments of any sort. The second worry about the property-based view, then, is that since it treats predicative expressions as denoting properties and predicative quantifiers as quantifying over properties, just as it treats nominal expressions as denoting individuals and nominal quantifiers as quantifying over individuals, it achieves an account of predicative quantification only at the cost of introducing unacceptable ontological commitments.

A third and final worry about the property-based account concerns the abundance of properties that it requires. For if we are going to explain predicative quantification by appeal to properties, then we will have to maintain that whenever there is something that a given object is, there is also some property that this object instantiates. Our account of predicative quantification seems committed to the following principle of Predicative Property Comprehension:

$$(1.12) \quad \forall X \exists x \forall y (y \text{ instantiates } x \equiv Xy)$$

Are there really that many properties, however? One might think otherwise.

There are two ways to press this worry. First, properties are often said to have the job of limning the structure of reality, or of making for objective resemblance. But the fact that there is something x and y both are, it may be urged, surely doesn't show that there is any deep sense in which they have something in common. They might both be inhabitants of Oakland, for instance, but being an inhabitant of Oakland doesn't make for objective resemblance in the way that e.g. being vermilion or being an electron does. Second, there are well-known arguments that seem to show that the view that there is a property corresponding to anything an object might be is not just metaphysically extravagant, but positively untenable, since it can be shown to lead to contradictions, such as Russell's Paradox.

The first version of the worry is not that troubling. The semanticist's abundant properties may not serve certain metaphysical ends, but this merely shows that we need to distinguish the abundant properties required for semantics from the sparse properties required for metaphysics. Once distinguished, each notion can do duty in its appropriate domain.⁹ Indeed, I will throughout our investigation assume that, for semantic purposes, it is legitimate to appeal to an abundant notion of "property" according to which there are such things as the property of being happy and the property of being an inhabitant of Oakland, even if such properties do not serve to

⁹Compare Lewis (1983).

carve reality at its fundamental joints. The second version of the worry, on the other hand, is more troubling. For if the property-based view can be shown to lead to an out-and-out contradiction, that shows that the account is just demonstrably *false*.

1.5 The Plan

Evidently, each of these three problems arises because the property-based account treats predicates as denoting entities of a certain kind, and predicative quantifiers as quantifying over those entities. The way to avoid these problems, it might therefore be suggested, is to join Davidson, and to abandon the view that predicates have properties, or indeed, entities of any sort, as their semantic values. As we've seen, however, the nominalist approach faces considerable difficulties of its own once it confronts the need to make sense of predicative quantifiers. It is, we are inclined to complain, well and good to say that although predicates have a systematic impact on truth conditions, they don't, for all that, denote anything. But absent an indication of how such a view could be made compatible with the phenomenon of predicative quantification, it is a non-starter. We appear to be at an impasse. On the one hand, the need to offer a semantics for predicative quantification looks like it will require us to identify a range of entities for predicates to denote and predicative quantifiers to quantify over. On the other hand, as soon as we identify such entities, we face the problems sketched in the previous section.

It is this dilemma that I aim to address in this dissertation. The plan is as follows. In Chapter 1, I begin by asking what sort of semantics a Davidsonian nominalist might be able to provide for predicative quantifiers. Our search for a nominalist alternative to the property-based view will involve two questions. We will first want to ask what account a nominalist could give of the semantic function of predicative expressions themselves, and then consider whether, and if so how, such an account could be extended to cover predicative quantifiers. As we shall see, Davidson's preferred approach to predication is most naturally paired with a substitutional account of predicative quantification. I will argue that although a substitutional approach is not as hopeless as sometimes thought, the substitutionalist ultimately cannot guarantee us that she has managed to secure the requisite generality for predicative quantifiers. I will then go on to develop what I term the Ockhamist Account on the nominalist's behalf. This account treats predicates as simply applying to the various objects they are true of, and employs predicative quantifiers in the metalanguage in order to provide a semantics for the object language counterparts. I will suggest that although predicates are, on the Ockhamist Account, semantically re-

lated to multiple objects, there is an important sense in which those objects cannot be identified as the meanings of predicates. The account thus manages to stay true to the nominalist's claim that predicates, though meaningful, needn't for that reason have properties, or any other entities, as their semantic values.

Although the Ockhamist Account does represent a viable alternative, it ultimately derives most of its appeal from the apparent shortcomings that beset the property-based account. After all, there certainly seems to be a close connection of *some* kind between predicates and properties, and analogously, between predicatively quantified sentences like 'Oscar is something' and nominally quantified counterparts like 'Oscar has some property'. This is a connection that the property-based account promises to illuminate. The remainder of the dissertation is therefore devoted to an investigation of whether the problems that initially appear to beset the property-based view do indeed undermine it.

In Chapter 2, I take up the challenge posed by the first objection I laid out above. The problem we here face is how to explain why it is that we cannot use a property denoting expression like 'the property of being happy' to specify what witnesses the truth of a predicatively quantified sentence, and correlatively, why, if predicates denote properties, pairs of sentences like 'Oscar is happy' and 'Oscar is the property of being happy' diverge in their truth conditions. I argue that a purely syntactic explanation of such substitution failures does not succeed. A Fregean strategy, according to which we can retain a denotational view of predicates by drawing a more fundamental distinction between the kinds of things nominal and predicative expressions denote, likewise fails, because it makes it impossible for us to say which particular thing a given predicate denotes. I argue that we can steer clear of the Fregean's predicament while at the same time avoiding the pitfalls inherent in naïve versions of the property-based view by rejecting an assumption shared by both: that the truth-conditional impact of an expression is entirely determined by the item it denotes. In particular, I propose that we can explain our substitution failure, while continuing to maintain a broadly property-based view, by distinguishing the semantic *relations* nominal and predicative expressions bear to their semantic values. Whereas nominal expressions like 'the property of being happy' *refer to* properties, predicates like 'happy' *express* or *ascribe* them. This then also lets us construe the difference between predicative quantification and nominal quantification over properties not in terms of what is quantified over, but rather in terms of the semantic relation the bound variables bear to the properties they take as values.

In Chapter 3, I look at a closely related objection to the property-based view pressed by Friedericke Moltmann. Unlike the first objection, which involves data involving property descriptions like 'the property of being happy', Moltmann's ob-

jection rests on data involving adjective nominalizations like ‘happiness’. I argue that Moltmann’s objection also doesn’t offer us ultimately convincing reasons to abandon the property-based view, and indeed, that the kind of maneuvers which allow the proponent of the the property-based view to evade the problem discussed in Chapter 2 can also be used to answer Moltmann’s arguments.

In Chapter 4, I turn to the second objection sketched above, concerning the felt “ontological innocence” of predicative quantifiers. The objection, I will suggest, can be understood as picking up on a complaint Prior registers about Quine’s views on the relation between quantification and ontological commitment. I will spend some time looking at Quine’s discussion of these matters in “On What There Is” and other texts in order to better understand what I term his Nominalization Thesis. According to this thesis, quantifying into the position of expressions of a certain sort *eo ipso* amounts to treating those expressions as names of entities of one kind or another. I argue that although Prior and those who have followed him are quite right to reject this thesis, the conclusion that predicative quantifiers therefore do not quantify over properties is unwarranted, since it conflates the question of whether a given quantifier *quantifies over* certain things with the question of whether the expressions into the position of which it quantifies *refer to* those things. The view I defend in Chapter 2 lets us disentangle these two issues: it shows that we can construe predicative quantifiers as quantifying over properties while at the same time acknowledging that the expressions into the position of which they quantify, and the variables which they bind, fail to name, or refer to, properties.

Finally, in Chapter 5, I will consider the argument from Russell’s Paradox against the principle of Predicative Property Comprehension, along with a closely related argument involving a generalization of Cantor’s Theorem. These arguments strike me as the most formidable hurdle faced by a proponent of the property-based view. I will canvas various strategies that one might pursue to respond to these objections, but also register some worries about each. The question of the final acceptability of the property-based view is therefore one I’ll ultimately have to leave open. I will, however, also offer some reasons for thinking that the Ockhamist Account is not entirely free from difficulties related to the paradoxes. The problems raised by Russell’s Paradox and Cantor’s Theorem therefore point to the need for further refinement on both ends, rather than showing that one account must be abandoned in favor of the other.

2 An Ockhamist Excursion

2.1 Introduction

The Davidsonian nominalist, as we saw, encounters a *prima facie* difficulty when confronted with the fact that natural language lets us quantify into the position of predicates. For if predicates don't denote anything, we cannot identify a range of entities for predicative quantifiers to quantify over, and so have no obvious way to give a semantics for such quantifiers. And yet it is precisely because the property-based approach treats predicative quantifiers as quantifying over entities of a certain sort that it encounters the difficulties we sketched in the last chapter. This suggests that the nominalist approach may be worth a second look. Granted, the Davidsonian gives us no range of entities over which we may regard predicative quantifiers as quantifying. But perhaps the demand that we identify such entities is misplaced. Maybe we can give a systematic semantics for predicative quantifiers without being required to construe them as as quantifying *over* anything. It is this possibility which I want to investigate in the present chapter.

I will begin, in the next section, by looking more closely at the anti-denotationalist approach to predication that Davidson favors. As we'll see, that approach is naturally paired with a substitutional account of predicative quantification. Substitutional quantification, even of a non-predicative variety, is often viewed with a great deal of suspicion, however. I'll therefore look at two general objections that have been raised against substitutional quantification, and, in the process, clarify what conditions a substitutional account must meet if it is to be adequate. The primary condition to emerge will be that of Sufficient Generality: a substitutional account of a given quantifier is acceptable only if it associates the quantifier with a substitution class that is expansive enough to secure the appropriate generality for the quantifier in question. In case of predicative quantifiers, this plausibly amounts

to the requirement that English must contain predicates for every property that a friend of the property-based approach could count as falling within the domain of such quantifiers. I will argue that, despite an important proposal due to Hofweber (2006), the substitutionalist in the end doesn't manage to provide us with a guarantee that her account meets this condition.

The failure of the substitutional account doesn't, however, mean that the nominalist is simply left stranded. For as I'll show in the remainder of the paper, it is possible to formulate a semantics for predicative quantifiers which, though not substitutional, is still in line with the thought that predicates fail to denote properties, albeit without fully embracing all aspects of the Davidsonian view. This Ockhamist Account, as I'll call it, combines an old nominalist idea, according to which predicates simply apply to the various items they are true of, with a more recent proposal, due to Boolos (1985), about the semantics of second-order quantifiers. I will close the paper by pointing to some subtle but important differences between the Ockhamist Account and Boolos' proposal, with the aim of clarifying the sense in which the Ockhamist avoids identifying entities as the semantic values of predicates, or as what predicative quantifiers quantify over.

2.2 Davidson on the Problem of Predication

I said earlier that, on the Davidsonian view, properties are otiose from the point of view of semantics. In actual fact, Davidson makes a stronger claim. The view that predicates denote properties, he argues, isn't just dispensable, but deeply misguided, and ultimately founders on what he terms the "Problem of Predication." I don't think that the property-based view does encounter the difficulty Davidson means to pose for it. But since his positive proposal is best understood when viewed in contrast against the property-based approach, and the difficulties he believes to be inherent in that approach, I'll begin with some exegetical remarks about how I think Davidson understands of the Problem of Predication, and how I take him to propose to solve it.

Davidson rightly distinguishes two different versions of the Problem of Predication: a metaphysical version and a semantic version.¹ The metaphysical problem arises via the question "of how particulars are related to properties," whereas the semantic problem arises via the question "of how subjects and predicates are re-

¹Though Davidson distinguishes these two versions of the problem, he arguably does not keep them firmly enough apart in some cases, as we'll see below. See also Burge (2007) for criticism of Davidson on this score.

lated” (Davidson, 2005, p. 83). This latter, semantic problem, Davidson says, “can be stated more directly and clearly by asking ... what is required of a sentence if it is to be true or false” (Davidson, 2005, p. 86). Since the view that predicates denote properties is semantic in nature, the version of the problem it encounters is the semantic one. The two problems do, however, bear something of family resemblance to each other, insofar as each takes the form of a regress. Indeed, “the difficulty of avoiding one infinite regress or another might almost be said to be *the* problem of predication” (Davidson, 2005, p. 79).

The metaphysical problem involves Bradley’s Regress. One way to understand this regress is as arising on the basis of the following two schematic principles:²

Monadic Grounding: the fact that a is F is grounded in (or consists in, or obtains in virtue of) the fact that a instantiates the property of being F .

Relational Grounding: the fact that a Rs b is grounded in (or consists in, or obtains in virtue of) the fact that $\langle a, b \rangle$ instantiates the relation of R-ing.

Thus, the fact that e.g. Oscar is happy is, by Monadic Grounding, grounded in the fact that Oscar instantiates the property of being happy. But this latter fact is, by Relational Grounding, itself grounded in the fact that $\langle \text{Oscar, the property of being happy} \rangle$ instantiates the relation of instantiating, and this fact is in turn is grounded in the fact that $\langle \langle \text{Oscar, the property of being happy} \rangle, \text{the relation of instantiating} \rangle$ instantiates the relation of instantiating, and so on. Since the grounding never ends, it looks like all facts are ultimately ungrounded. The question of how someone who accepts properties, and views facts as “involving” properties, can avoid this regress (or perhaps reveal it to be non-vicious) is an interesting one, but not one I will pursue here. I mention the metaphysical regress only to distinguish it from the semantic regress, which is our proper concern.

The semantic regress makes occasional appearances throughout Davidson’s work. An early example is the following:

We might assign Theaetetus to ‘Theaetetus’ and the property of flying to ‘flies’ in the sentence ‘Theaetetus flies’. The problem then arises how the meaning of the sentence is generated from these meanings. Viewing concatenation as a significant piece of syntax, we may assign

²Here I draw in part on Dorr’s (2008) presentation of the regress. See Van Cleve (1994) for an illuminating discussion of various related but distinct regresses in the vicinity.

to it the relation of participating in or instantiating; however, it is obvious that we have here the start of an infinite regress.³

The regress receives more sustained discussion in Davidson (2005). A particularly helpful description of the problem taken from that work is the following:

In the sentence ‘Sally is pretty’ we are told that the first and third words designate entities, and that that is their entire semantic function. ... Still if the word ‘is’ is doing no work, the sentence consists of just two designating words. If the ‘is’ is part of a semantically unstructured predicate, the problem remains the same, since all predicates, according to Strawson, designate universals. But if the ‘is’ expresses a relation between Sally and prettiness, we have only made the problem worse, assuming, as Strawson does, that relational predicates designate relations. Following Strawson’s strategy turns ‘Sally is pretty’ into a triple of designators.⁴

The problem, as I understand it, is that of taking it that an account of the semantics of a given sentence is *complete* once one has assigned entities as the semantic values of the various expressions occurring in that sentence. For if this is *all* one has done, then the question of what the truth conditions of the sentence are, or of what accounts for the fact that the sentence is even the kind of thing that is truth-evaluable, hasn’t been touched on. The sentence appears simply as a configuration of various expressions, each of which individually designate some entity or other, without any indication of how the sentence as a whole is to receive truth conditions. The problem of predication, that is, the problem of saying “what is required of a sentence if it is to be true or false,” thus hasn’t been solved. The regress then arises if one then attempts to overcome this problem by identifying some further expression (or syntactic element) in the sentence, and claiming that it denotes a certain relation (such as instantiation) that is supposed to hold between the items denoted by the remaining expressions occurring in the sentence. This clearly doesn’t overcome the problem: the sentence still looks like merely a configuration of expressions that individually denote certain items — one of those items now being the relation of instantiation — and we have gotten no closer to how the truth conditions of the sentence are to be determined.

³Davidson (1967).

⁴Davidson (2005, p. 113)

The solution to the problem, Davidson suggests, is implicit in Tarski's work. In the course of giving an informal presentation of his theory of truth, Tarski (1935) writes the following:

In order to explain the sense of [the phrase "satisfies a given sentential function"] we consider the following scheme:

for all a, a satisfies the sentential function x if and only if p.

and substitute in this scheme for 'p' the given sentential function (after first replacing the free variable occurring in it by 'a') and for 'x' some individual name of this function. Within colloquial language we can in this way obtain, for example, the following formulation:

for all a, a satisfies the sentential function 'x is white' if and only if a is white⁵

Applied to 'is happy', and substituting talk of satisfaction by objects with talk of truth under an assignment, we get the following:

Davidsonian Predication: for any term α , $\lceil \alpha$ is happy \rceil is true on g iff $\text{Den}^g(\alpha)$ is happy.

where $\text{Den}^g(\alpha)$ is the item denoted by the term α relative to the assignment function g . Thus, given that e.g. $\text{Den}^g(\text{'Oscar'})$ is Oscar, we have it that 'Oscar is happy' is true on g just in case Oscar is happy. The sentence is then true *simpliciter* if it is true on any assignment. Since 'Oscar' denotes Oscar on any assignment, we get the result that 'Oscar is happy' is true just in case Oscar is happy.

The crucial point is that, on this approach, the semantic function of 'Oscar' is sharply distinguished from that of 'happy', and more generally, the semantic function of names is sharply distinguished from that of predicates. On the kind of property-based approach that Davidson attacks, names and predicates alike are treated as categorematic expressions, subject to separate but parallel denotational clauses:

$\text{Den}^g(\text{'Oscar'}) = \text{Oscar}.$

⁵Tarski (1935, p. 190). Tarski gives the formal analogue of the idea, which more closely parallels the clause I here offer for $\lceil \alpha$ is happy \rceil (insofar as talk of satisfaction by individual objects is replaced with talk of satisfaction by infinite sequences of objects), in his Definition 22.

$\text{Den}^g(\text{'happy'}) = \text{the property of being happy.}$

On the Davidsonian approach, by contrast, only names are subject to denotational clauses. Predicates are treated as *syncategorematic* expressions: they do not have the function of denoting something, but are rather subject to the kind of compositional clause given for ‘is happy’ above. In an important sense, the predicate itself is not given any “independent” semantic function at all.⁶ It is only complete *sentences* (open or closed) of the form $\ulcorner \alpha \text{ is happy} \urcorner$, which contain the predicate as a constituent, that are subject to semantic interpretation, specifically, subject to a clause that tells us under what conditions any sentence of this form is true (relative to an assignment g).⁷ The demand that a semantic theory specify what is required of a sentence if it is to be true or false is thus clearly met.

Davidson’s proposal solves his Problem of Predication. But does his argument against the property-based view succeed? I think it does not. What Davidson is certainly right about is that no mere list of denotational clauses, no matter how elaborate, will amount to a semantic theory — *some* element of the sentence will always have to be treated syncategorematically, having the function of “triggering” a compositional clause. It may also be the case that this point has not been sufficiently appreciated by all those who have historically been interested in the nature of predication.⁸ But the claim that this observation undermines the property-based approach fails to be borne out.

On the property-based view, the predicative expression ‘happy’ denotes the property of being happy, and the name ‘Oscar’ denotes Oscar. This then raises the question of how to explain the fact that the sentence ‘Oscar is happy’ isn’t just a configuration of expressions that individually denote those two items, but is rather the sort of thing that has truth conditions. We can’t, as Davidson points out, answer this question by saying that the copula ‘is’ functions to denote the relation of instantiation, since that will simply make the sentence appear like “a triple of

⁶Hence the label ‘syncategorematic’. Traditionally, the distinction between categorematic and syncategorematic expressions was a distinction between words that have a meaning “in isolation” and ones that have a meaning only in combination with other words. I use the terms to distinguish expressions that are independently interpreted via e.g. denotational clauses, from expressions for which we only give clauses that specify the interpretation of larger structures containing the given expression as a proper part.

⁷Compare also Davidson’s (1967) discussion of ‘the father of’. He here suggests that rather than take this expression to denote a function, we instead subject it to a syncategorematic clause of the following sort: $\text{Den}(\ulcorner \text{the father of } \alpha \urcorner) = \text{the father of } \text{Den}(\alpha)$.

⁸Though Davidson hasn’t been the only one to stress the point. Sellars’ (1962) discussion of Jumblese, for example, points in the same general direction.

designators.” The solution should be obvious, however: rather than treat ‘is’ as a categorematic expression that functions to denote the relation of instantiation, we could instead treat it as a syncategorematic expression subject to the following compositional clause:

Property-Based Predication v1.0: for any term α and predicate ϕ , $\ulcorner \alpha$ is $\phi \urcorner$ is true on g just in case $\text{Den}^g(\alpha)$ instantiates $\text{Den}^g(\phi)$

Alternatively, we could treat ‘is’ as a semantically vacuous expression, so that ‘is happy’ simply inherits the denotation of ‘happy’.⁹ On this route, we will, as Davidson puts it, want to view “concatenation as a significant piece of syntax.” But rather than simply “assign to it the relation of participating in or instantiating” — and thereby fall prey to the Problem of Predication — we will allocate to it the syncategorematic role previously played by ‘is’:

Property-Based Predication v2.0: for any term α and predicate ϕ , $\ulcorner \alpha \widehat{\phi} \urcorner$ is true on g just in case $\text{Den}^g(\alpha)$ instantiates $\text{Den}^g(\phi)$

This represents a “limit case”: here the syncategorematic role isn’t played by any expression in the sentence, but rather by the syntactic configuration in which the subject and predicate expressions stand to each other in the sentence.

Davidson does recognize a response to his argument roughly along these lines, but finds it lacking:

The standard semantics employed in proving that syntactically formulated rules of inference are valid ... associates sets with predicates. There is nothing incorrect about such a method, but it is wrong to suppose that the usefulness of this method shows that we can explain predication simply by associating predicates with sets. In effect, the standard semantics employed understands such predications as ‘Theaetetus sits’ as ‘Theaetetus is a member of the set of seated objects’. ... It is obvious, however, that the role of the original predicate has not been explained by this process. In the sentence ‘Theaetetus is a member of the set of seated objects’ the predicate ‘sits’ does not appear; the new predicate is the predicate ‘is a member of’, the semantic role of which

⁹This treatment of the copula is fairly standard. See e.g. Heim and Kratzer (1998). Davidson seems to have an approach of this general sort in mind when he speaks about treating ‘is’ as “part of a semantically unstructured predicate” in the quote given earlier.

is not given. We are back with Plato's problem of explaining the predicate 'instantiates' if we take a predicate like 'sits' to refer to or stand for a Form.¹⁰

There would seem to be two ways to understand Davidson's point here, but on neither reading is it convincing. On one reading, he is raising a version of the metaphysical Problem of Predication. The problem emerges if one sets oneself the task of giving a completely general "analysis" of all predicational facts: one attempts to analyze the fact that *a* is *F* in terms of the fact that *a* is a member of the set of *F*s, only to be embarrassed to find that the latter fact still involves predication in the form of membership, so to speak.¹¹ This is of course a fool's task. But it is not a task that someone who puts forth the *semantic* thesis that predicates denote properties (or sets) must regard themselves as saddled with. One can well accept that the *sentence* 'Theatetus sits' is true just in case Theatetus instantiates the property of being seated, without also holding that the *fact* that Theatetus sits consists in the fact that he instantiates this property, let alone take up the even more dubious project of trying to provide an analysis of the fact that Theatetus sits in terms that no longer involve any form of predication.

On a second, and more plausible, reading, Davidson's point is that the metalinguistic sentence we use to state the truth conditions of a given object-language sentence should not involve a predicate distinct from the one that occurs in the object-language sentence, because then we would need to be given an explanation of the meaning of this new predicate. What we want, ultimately, is a semantic theory that yields *homophonic* truth conditions. We want, for example, to be told that the sentence 'Oscar is happy' is true just in case Oscar is *happy*, and not that it is true just in case Oscar is *a member of the set of happy objects* or just in case Oscar *instantiates the property of being happy*.

This point likewise fails to convince, however. First, it is unclear why we should be required to give an analysis of the predicate that occurs in the metalinguistic statement of truth conditions that our theory delivers. After all, the metalanguage is a language we are assumed already to understand. The predicate involved in the

¹⁰Davidson (2005, p. 157-158).

¹¹As Van Cleve (1994) stresses, this problem is slightly different from the problem that arises in the version of Bradley's Regress that I set out above. Here, the difficulty doesn't (or doesn't directly) involve a regress, but rather a circularity, in the sense that one is using predication in an attempt to provide a general analysis of predication. See also Lewis' (1983) criticism of Armstrong (1978), who on occasion sounds like he regards the demand that a completely general analysis of predication be given as legitimate.

metalinguistic sentence is, therefore, one whose meaning we don't need to have explained to us. We can of course, if we wish, inquire into the semantics of the metalanguage. Our explanation of the truth conditions of sentences containing the allegedly problematic 'instantiates' might (or might not) then in turn involve some new predicate. But again, it isn't clear why it would be a problem if it did involve a new predicate.

Second, as regards homophony, it rather seems like the goal-posts have been moved. The original challenge posed by the Problem of Predication was to give a semantic analysis of simple subject-predicate sentences that reveals those sentences as the sort of expressions capable of being true or false, or, to put it more concretely, to give a semantic account that yields truth conditions for sentences, rather than simply associating various elements of a sentence with entities of one sort or another. And *this* is something that the property-based account does manage to do. It was no part of the original bargain that the truth conditions our theory delivers should also be homophonic.

Third, although the requirement of homophony is implicit in Tarski's Convention T (since it requires that the sentence appearing on the right-hand side of the biconditional in a T-sentence be the very sentence a structural description of which appears on the left-hand side, at least in cases where the metalanguage extends the object language), it isn't clear that Davidson himself always respects the requirement. The semantic analysis he provides of action sentences, for example, fails to be homophonic, since it involves explicit quantification over events despite the fact that no similarly *overt* quantification over events is present in the relevant object-language sentences.

Finally, as Davidson himself notes in his (1977), it is easy enough to enrich a set- or property-based account with further axioms so as to allow the derivation of homophonic truth conditions. If we, for example, explain that the property of being happy is instantiated by any given object just in case that object is happy, then from the claim that 'Oscar is happy' is true just in case Oscar instantiates the property of being happy, we can straightforwardly derive the homophonic conclusion that 'Oscar is happy' is true just in case Oscar is happy. Indeed, this kind of equivalence is arguably involved in the very notion of a property: the property of being happy just *is* the unique *y* that any *x* instantiates if, and only if, that *x* is happy.

2.3 The Substitutional Proposal

Although Davidson hasn't offered us convincing reasons for rejecting a property-based approach to predication, his syncategorematic treatment does look like it provides us with a viable alternative, at least when it comes to the semantics of simple subject-predicate sentences. The question, as we earlier noted, is whether, and if so how, his account can be squared with the evident possibility of *quantifying* into the position of predicates. One tempting way to provide an account of predicative quantification without putting any pressure on Davidson's syncategorematic approach is to treat the relevant quantifiers substitutionally. A substitutional account would let us retain Davidson's syncategorematic clauses, because substitutional quantifiers can quite generally be incorporated into a semantic theory while leaving the remainder of the theory untouched.

Suppose that we have a semantic theory along Davidsonian lines governing atomic sentences like 'Happy(oscar)' — the theory assigns a denotation to 'oscar', and provides a syncategorematic clause to govern sentences of the form $\ulcorner \text{Happy}(\alpha) \urcorner$. To deal with predicative quantifiers, we now enrich our semantic theory with the following clause:

Substitutional Predicative Quantification: $\ulcorner \exists Y \psi \urcorner$ is true on g iff there is some predicate ϕ in the object language such that $\psi[\phi/Y]$ is true on g .

where $\psi[\phi/Y]$ is the result of substituting ϕ for every free occurrence of the predicative variable Y in ψ . We thereby gain the resources to handle predicatively quantified sentences without any change to the rest of the theory. Combining a syncategorematic treatment of predicates with a substitutional account of predicative quantifiers thus appears to give us what we were after: a semantic theory for the fragment of English we're considering that avoids the need to assign properties as the denotation of predicates and predicative variables.

Of course, the proposed substitutional account only counts as a viable alternative to the property-based account if substitutional quantification is itself in general acceptable. And a number of arguments have been put forward to show that it isn't. I will look at two of those here. Both arguments are formulated as objections to substitutional accounts of nominal quantification, but consideration of them will serve to clarify what conditions must be in place for a substitutional account of any sort to be successful. Having laid out those conditions, we will then consider whether the substitutional account of predicative quantification which we're here considering meets them.

The first argument is due to van Inwagen (1981). His complaint is that he simply “cannot understand [a substitutionally quantified sentence] because [he does] not know what proposition it expresses” (van Inwagen, 1981). His reason is that friends of substitutional quantification have offered only the following biconditional by way of explaining what a substitutionally quantified sentence is supposed to mean:

$\lceil \Sigma v \psi \rceil$ is true iff there is some term α in the object language such that $\psi[\alpha/v]$ is true.¹²

An instance of the right hand side of this biconditional makes a metalinguistic claim. The friend of substitutional quantification is therefore committed to the view that substitutionally quantified sentences are truth-conditionally equivalent to sentences that make metalinguistic claims. And yet friends of substitutional quantification also insist that the proposition expressed by a substitutionally quantified sentence is not itself metalinguistic. Take the sentence ‘ $\Sigma x[\text{Dog}(x)]$ ’. The friend of substitutional quantification tells us that this sentence is true just in case some term α is such that $\lceil \text{Dog}(\alpha) \rceil$ is true, but also insists that ‘ $\Sigma x[\text{Dog}(x)]$ ’ doesn’t, for all that, express the proposition that some term α is such $\lceil \text{Dog}(\alpha) \rceil$ is true. But then we’ve only been told what proposition ‘ $\Sigma x[\text{Dog}(x)]$ ’ does not express, without yet knowing what proposition it does express. And so, van Inwagen charges, we haven’t been told anything that would let us understand the substitutionally quantified sentence.

If a substitutionalist could indeed make nothing but this negative claim about what proposition a substitutionally quantified sentence does not express, then van Inwagen’s complaint would, I think, have merit. But it isn’t clear why the substitutionalist has to leave things there. Consider the semantic clause that a friend of objectual quantification will put forward:

$\lceil \exists v \psi \rceil$ is true on g iff there is some object a and assignment g' such that $g'(v) = a$ and g' is otherwise like g , and ψ is true on g' .

An instance of the right-hand side of this biconditional expresses a proposition that is just as metalinguistic as the one expressed by an instance of the right-hand side of the biconditional put forward by the substitutionalist. And the friend of objectual

¹²Following van Inwagen (1981) and Kripke (1976), I will in this section sometimes use ‘ Σ ’ to notationally distinguish quantifiers that are intended to be governed by a substitutional semantics from those that are intended to be governed by an objectual semantics, which I will represent using the usual ‘ \exists ’.

quantification will of course also want to insist that the proposition expressed by an objectually quantified sentence is nevertheless not metalinguistic in character. So it looks like we can mount an objection parallel to the one van Inwagen presses against the substitutionalist. The objectualist, we will complain, has so far only told us that an objectually quantified sentence does not express the metalinguistic claim expressed by the relevant instance of the right-hand side of the above biconditional. She has not, however, told us what claim it does express. So we haven't yet been told anything that would let us understand the objectually quantified sentence.

The appropriate response, I should think, is to point out that the above biconditional is merely one part of the machinery of the objectualist's semantic theory. The relevant instance of the above biconditional isn't intended to give us the meaning of a given objectually quantified sentence all on its own — it is only the semantic theory as a whole that does this. And the theory as a whole, the objectualist will point out, ultimately delivers a specification of truth conditions that is no longer metalinguistic. Given the sentence ' $\exists x[\text{Dog}(x)]$ ', for example, the theory as a whole will tell us that this sentence is true just in case there is at least one dog, or as we might also say, just in case something is a dog. The objectualist's claim that ' $\exists x[\text{Dog}(x)]$ ' does not express a metalinguistic claim is thus borne out once we bring to bear the semantic theory as a whole, and not just the single clause governing the objectual quantifier.

Returning to van Inwagen's objection, it seems clear that the substitutionalist ought to give the same response. The substitutional clause she offers to govern her quantifier is also just one part of her semantic theory. If van Inwagen is interested in knowing what a given substitutionally quantified sentence means, he can't just look at the clause governing the substitutional quantifier and leave things there. Rather, he has to look at the truth conditions that the substitutionalist's semantic theory as a whole yields for the sentence in question.¹³

The second objection I want to consider, due to Hugly and Sayward (2002), picks up on just this point. The problem with substitutional quantification, they argue, is that if we offer a substitutional clauses to govern the quantifiers of our object language, the resulting semantic theory will not let us derive non-metalinguistic truth-conditions for quantified sentences. This will be so, they claim, even if we are dealing with the kind of language that has often been thought to be rather well suited to the substitutionalist's purposes, viz. a language which contains a term for every

¹³To be fair, van Inwagen seems to take himself to be arguing against a substitutionalist who is willing to offer the metalinguistic truth conditions, and *nothing* more. The more liberal substitutionalist I am imagining may therefore not be van Inwagen's target.

item in the intended domain, such as the Language of Arithmetic (LA). Consider, for instance, the arithmetic sentence ‘For some x , x is even’. Under an objectual treatment of the quantifier in this sentence, we can derive the following statement of truth-conditions: ‘For some x , x is even’ is true just in case for some x , x is even. A substitutional treatment, by contrast, cannot generate this biconditional. Or so Hugly and Sayward claim.

They note that on a substitutional semantics, the task of deriving this biconditional reduces to the task of deriving the following biconditional: for some n , n is a numeral and $\lceil n$ is even \rceil is true iff for some x , x is even. They accept that the left-to-right direction of this biconditional is provable. The right-to-left direction, by contrast, cannot, they claim, be proven:

We start with ‘For some x : x is even’. And that is as far as we can go! Of course if it were a semantical and syntactic point that 2 is even, then we could obtain the result that ‘2 is even’ is true and then the result that for some n : n is a numeral and the result of replacing ‘ x ’ in ‘ x is even’ by n is true. But that 2 is even is a point of arithmetic, not of semantics or syntax. So the route is barred.¹⁴

I find this argument puzzling. The derivation of the right-to-left direction of the biconditional would presumably proceed as follows:

1	(1)	For some x , x is even	Assume
2	(2)	2 is even	Assume (flag ‘2’)
	(3)	$\forall x \exists n [n \text{ is a numeral} \wedge \text{Den}(n) = x]$	Fact about LA
	(4)	$\exists n [n \text{ is a numeral} \wedge \text{Den}(n) = 2]$	$\forall E$ 3
5	(5)	t is a numeral $\wedge \text{Den}(t) = 2$	Assume (flag ‘t’)
2, 5	(6)	$\text{Den}(t)$ is even	From 2, 5
	(7)	$\lceil t$ is even \rceil is true iff $\text{Den}(t)$ is even	Theorem of the semantics
2, 5	(8)	t is a numeral $\wedge \lceil t$ is even \rceil is true	From 5, 6, 7
1, 2, 5	(9)	For some n , n is a numeral $\wedge \lceil n$ is even \rceil is true	$\exists I$ 8; $\exists E$ 4, 5, 9; $\exists E$ 1, 2, 9
	(10)	For some x , x is even only if for some n , n is a numeral $\wedge \lceil n$ is even \rceil is true	CP 1, 9

What is supposed to be wrong with this derivation? Hugly and Sayward (2002) seem to be claiming that line (2) could only be introduced as an instance of line (1)

¹⁴Hugly and Sayward (2002). The same argument is put forward in Hugly and Sayward (1996, p. 301).

if it were “a semantical and syntactic point that 2 is even.” I am, however, at a loss to see why this should be so. On another reading, they are claiming that one could derive (9) — i.e. the semantic claim that for some n , n is a numeral $\wedge \lceil n \text{ is even} \rceil$ is true — on the basis of the assumption that 2 is even, only if that assumption likewise encoded a semantic fact, which it does not. Again, though, I fail to see why this should be so. Line (2) is introduced simply as an assumption for later discharge via *EE*. The semantic content of (9) derives not from (2), but from the semantic content of lines (3) and (7).

What is noteworthy about our derivation, it seems to me, isn't that (2) encodes an arithmetic (rather than a semantic) fact, but the appeal, at line (3), to the claim that for every natural number x , there is some term n which denotes x . The fact that this claim holds of the Language of Arithmetic is crucial to the derivation. For it is only in the presence of this guarantee that we can, via a substitutional clause for the quantifier, derive the conclusion that the sentence ‘for some x , x is even’ is true just in case some natural number is even.¹⁵ The upshot, more generally, is that if we give substitutional clauses for the nominal quantifiers in our object language, then we will be constrained to interpret those quantifiers as making a claim only about whatever objects are denoted by terms present in the object language.

This suggests the following condition on the acceptability of a substitutional semantics for nominal quantification:

Sufficient Generality: a substitutional account of an occurrence of a nominal quantifier in a given sentence is acceptable only if the language under consideration contains a term for every object about which that quantified sentence makes a claim.

¹⁵In their (2002), Hugly and Sayward charge that Kripke (1976) “fails to recognize the point [that the relevant T-sentences aren't derivable in a semantic theory involving substitutional clauses for the quantifiers].” In fact, however, Kripke says quite a lot about what is needed for the desired T-sentences to be entailed by the theory. In particular, he points out that the theory will require an axiom like the one invoked at line (3) in our derivation. The need for such an axiom, he furthermore emphasizes, is not peculiar to a theory involving substitutional clauses: “In standard referential quantification, what we would derive [from the basis clauses plus the recursion clauses] directly is not something like $T((x_1)(x_1 \text{ is fat})) \equiv (x_1)(x_1 \text{ is fat})$, but rather something like $T((x_1)(x_1 \text{ is fat})) \equiv$ there is a sequence s such that every sequence s' differing from s in at most the first place has a fat first member. Extra axioms are needed to restore homophony ... Almost all truth theories, including those for referential quantification, are ‘naturally’ geared to a non-homophonic translation, and special additional axioms are generally required to restore homophony. Wallace has *not* discovered a special feature of substitutional quantification, unnoticed by those who thought the recursive clauses (4)-(6) were sufficient” (Kripke, 1976, p. 357 - 363).

As we have seen, in certain cases, such as arithmetic, the condition is met. There are also more homely cases in which the condition is met, for example, when a quantifier is contextually restricted to a domain — such the students in a particular class, or US capital cities — every element of which is denoted by some term in our language. The trouble, of course, is that not every domain over which we may have occasion to quantify is guaranteed to be like this. Indeed, there are certain domains, such as the real numbers, where we are guaranteed *not* to have a term at our disposal for every element of the domain. In this kind of case, a substitutional account won't be acceptable.

There are ways in which a committed substitutionalist might try to circumvent this difficulty. To get around the problem of insufficient generality, she might choose to simply enlarge the substitution class associated with her substitutional quantifier to include not just the terms we already have, but also all of the nameless objects themselves, with the stipulation that these objects are to be treated as functioning autonomously, that is, as denoting themselves. Worries of insufficient generality would then disappear, since we would be assured of having a term for every object. Of course, such a move would require us to accept that the substitution instances of quantified sentences include not just ordinary sentences, but also what Kaplan (1986) calls \$entences: complexes of linguistic expressions and ordinary objects.¹⁶ But since \$entences function exclusively as part of the recursive machinery of the semantic theory, without the suggestion that they also crop up in actual linguistic exchanges, the fact that we must countenance such entities may be judged innocuous.¹⁷ Absent such a move, however, a substitutional accounts of nominal quantification won't in general be acceptable.

¹⁶The idea here resembles the “Lagadonian method” described by Lewis (1986, p. 145), and has occasionally been invoked on behalf of substitutionalism. Richards (1974), for example, constructs a substitutional account along such lines, and Kripke (1976, p. 353) mentions the possibility of a substitution class consisting of autonomously referring items. Richards' and Kripke's proposals differ slightly from what we are here contemplating in that Richards' substitution class contains no ordinary names but is comprised entirely of objects, and Kripke's substitution class contains only autonomously denoting expressions but no non-linguistic objects.

¹⁷Though there is an interesting question about whether we don't, after all, occasionally make use of expressions resembling \$entences. In an unrelated context, Jackendoff (1984) mentions the example ‘The sound p^h ’. It seems that the p^h sound produced in uttering this description functions autonomously, or nearly so: as a name of type of sound of which it is itself an example.

2.4 Back to the Predicative Case

The question we must ask about the substitutional account of predicative quantification, then, is whether it is able to secure the requisite generality for predicatively quantified sentences. Saying what that requirement amounts to in the predicative case is somewhat less straightforward than it was in the nominal case. In the nominal case, the substitutionalist accepts — or so I’ve at any rate been assuming — that nominal expressions function to denote objects. So although the substitutionalist’s semantics doesn’t directly associate a domain of entities with quantifiers by way of an assignment function, her proposal does allow us to demarcate such a domain indirectly, by looking at the things that are denoted by the terms the substitutionalist appeals to in evaluating quantified sentences. We can then assess the acceptability of the substitutionalist’s proposal by asking whether the domain her proposal affords for is expansive enough to yield acceptable truth conditions.

Things are otherwise in the predicative case. The whole point of the Davidsonian proposal, after all, was to deny that predicates function to denote things. Within a Davidsonian framework, a substitutional proposal therefore doesn’t even indirectly associate a domain of entities with predicative quantifiers. To gain some purchase on the issue, I propose to take it that the property-based account, whatever other faults it may have, is adequate *at least with respect to the issue of generality*. We will therefore consider an account of predicative quantification adequate only if it is able to allow for at least as much generality as the property-based approach allows for.¹⁸ The question of the acceptability of the substitutional account of predicative quantification then amounts to the question of whether it is plausible to suppose that English indeed puts enough predicates at the substitutionalist’s disposal so that, whenever the proponent of the property-based account is able to point to some property to secure the truth of some predicatively quantified sentence, the substitutionalist is able to point to some English predicate to secure the truth of

¹⁸Remember that the Davidsonian, as I am construing him, does not deny that properties *exist* — he only denies that the semantics of predicates and predicative quantifiers is fruitfully understood as involving properties. As Davidson puts it: “To recognize that it is necessary to distinguish between sentences that do and sentences that do not refer to abstract entities is not to say that properties, relations, and so forth do not exist. The existence of abstract objects is a separate issue” (Davidson, 2005, p. 146). I am also assuming that it is common ground between the property-based theorist and the Davidsonian that we may appeal to *abundant*, and not just to “sparse,” properties. I will, in what follows, also often simply speak of “the property expressed” by (or “corresponding to”) a given predicate — from the point of view of the Davidsonian, such talk should be understood as saying that the relevant property is the one that a property-based theorist would claim the predicate in question denotes.

that same sentence. That is to say: given a predicatively quantified sentence of the form $\lceil \exists \Upsilon \psi \rceil$, is it true that whenever a proponent of the property-based account can claim that there is some property p and assignment g such that $g(\Upsilon) = p$ and ψ is true on g , the substitutionalist can claim that there is some predicate ϕ of English such that $\psi[\phi/\Upsilon]$ is true on g ?

In certain restricted cases, the substitutionalist will again be able to keep pace with the property-based account. Suppose, for instance, that I am trying to teach color and shape vocabulary to a child. On the table in front of us there are some wooden blocks, all of which are either square or cylindrical in shape, and either red, yellow, or blue in color. I say things like ‘Block A is something that Block B isn’t’, and ask to be told what it is that A is but B isn’t. Here the substitutionalist does alright. The range of acceptable answers are all constructable using the color and shape vocabulary at issue. Since that vocabulary is available to the substitutionalist, she has no difficulty securing the truth of various predicatively quantified sentences about the blocks on the table.

The trouble, again, is that not all cases are of this restricted sort. The challenge facing the substitutionalist is to give us some grounds for thinking that the predicative expressions at the substitutionalist’s disposal suffice even in much more unrestricted contexts. Prima facie, the substitutionalist faces a difficult task here. After all, in highly unrestricted contexts, the property-based account can count any property at all as falling within the domain of quantification. So for the substitutional account to be adequate, English would have to contain a predicate for any property there is. And on the face of it, the thought that English contains a predicate for every property is no more plausible than the claim that it has a term for every object we might have occasion to quantify over. Indeed, given certain views about properties, the substitutionalist may be in an even worse position here than in the nominal case. If, for example, we hold that there is a property corresponding to any collection of objects, then there will be more properties than there are objects; and if there are already uncountably many objects, we will be unable to construct as many predicates as there are properties.¹⁹

¹⁹Note that the “Lagadonian method” of §Sentences isn’t available here, given the constraints imposed by the Davidsonian treatment of predicates. That is, a Davidsonian substitutionalist wouldn’t want to include properties within the substitution class associated with the predicative quantifier, with the stipulation that those properties are to be treated as denoting themselves, since the expressions in the substitution class are precisely not supposed to function to denote properties.

2.5 Hofweber on Expressive Completeness

But perhaps we are being overly hasty. Hofweber (2006) has argued that the predicative resources of English are not nearly as impoverished as one might initially think. He proceeds by presenting what he calls the inductive argument for the expressive incompleteness of English, and then offers a proposal to resist its conclusion. Let us therefore consider whether our substitutionalist could avail herself of Hofweber's proposal.

Hofweber begins by noting that we can't show the predicative resources of English to be impoverished by using an expression of the form 'the property of being ϕ ' to give an example of a property for which there is no corresponding English predicate, because given any such example, there of course *is* a corresponding English predicate, namely the predicate ϕ that we used to specify the property. A more promising strategy, he suggests, is to use English to cast doubt on the expressive completeness of *other* languages. For if it is possible to cast such doubt on other languages, then there is reason to suppose that English itself suffers from similar shortcomings. Consider Ancient Greek, for instance. We have a predicate in English that expresses the property of tasting better than Diet Pepsi (to use Hofweber's example), but Ancient Greek, it would seem, had no such predicate. And if Ancient Greek lacks predicates for certain properties, then it seems only reasonable to conclude that the same is true of contemporary English. To think otherwise would be to adopt a chauvinistic attitude towards the expressive resources of our own language.

Hofweber agrees that this "inductive argument" shows that we ought to regard contemporary English as relevantly on par with Ancient Greek when it comes to expressive completeness. But rather than conclude that English and Ancient Greek are therefore alike in being expressively incomplete, Hofweber instead insists that both languages are capable of expressing every property there is. In fact, any natural language is capable of expressing every property there is.

Consider again the property of tasting better than Diet Pepsi. We were inclined to think that Ancient Greek doesn't have a predicate expressing this property, but on reflection, that isn't really right. After all, Ancient Greek has context-sensitive expressions, specifically, demonstratives. So although no context insensitive predicate of Ancient Greek expresses the property of tasting better than Diet Pepsi, Ancient Greek presumably did possess a context sensitive predicate, namely its translation of 'tastes better than *that*', which does, in the presence of a demonstrated sample of Diet Pepsi, express the relevant property. Of course no (ancient) speaker of Ancient Greek ever used this predicate to express that property, there not having

been any Diet Pepsi around at the time to demonstratively refer to. But when we are asking about what properties are expressible in a language, Hofweber plausibly contends, we aren't asking what properties speakers of the language actually did express, or even what properties speakers of the language could have expressed given their actual circumstances, but rather what properties the predicates of that language are capable of expressing in appropriate contexts. To ask whether a property p is expressible in a language \mathcal{L} , is, in other words, to ask “whether or not there is a predicate ϕ (of \mathcal{L}) and a context c such that an utterance of ϕ (by a speaker of \mathcal{L}) in c expresses p ” (Hofweber, 2006, p. 173).

Hofweber suggests that we formally model the availability of such context sensitive predicates by adding to our language a new stock of nominal variables that are incapable of being bound by nominal quantifiers, and then allowing predicates like ‘tastes better than v ’ that contain such variables. Our substitutionalist could avail herself of this proposal by allowing her substitutional predicative quantifier to shift the assignment of values to the members of this special class of nominal variables. Her clause for the particular predicative quantifier will be modified to look as follows:

$\ulcorner \exists \Upsilon \psi \urcorner$ is true on g iff there is some predicate ϕ in the object language and some assignment g' differing from g at most in what objects it assigns to any special variables occurring in ϕ , such that $\psi[\phi/\Upsilon]$ is true on g' .²⁰

In this way, the substitutionalist can use the predicate ‘tastes better than v ’ in conjunction with an assignment that assigns Diet Pepsi to the variable ‘ v ’ to do the work that the property-based theorist accomplishes by appealing to the property of tasting better than Diet Pepsi.

But do these modifications suffice to give the substitutionalist the means to track the full range of generality available on the property-based account? It is far from clear that this has been shown. Hofweber’s proposal is best thought of as offering the substitutionalist a way of responding to a very specific concern issuing from the observation that “what objects there are matters for what properties and propositions there are” (Hofweber, 2006). The problem that this fact poses for substitutionalism is again dramatized particularly well by the case of real numbers.

²⁰Hofweber’s (2006) formal treatment differs slightly because he (i) treats sentences that appear to involve quantification over properties as abbreviations of infinite disjunctions, and (ii) uses existential quantifiers in the metalanguage to bind the “special variables” in ϕ (whereas I’ve exploited a shift in the assignment function). I believe that the clause I’ve given captures the essentials of his treatment within the kind of substitutional account we’ve been discussing, however.

Given any real number n , there is also the property of being greater than n , meaning that there are uncountably many properties. And yet we can construct only countably many predicates. It therefore looks like a substitutional account of predicative quantification will inevitably fail on grounds of insufficient generality. It is here that Hofweber's proposal comes to the rescue: we can simply allow our substitution class to include the predicate 'is greater than v ', with the variable v capable of taking any real number as its value.

The trouble with Hofweber's proposal is that there is simply no direct link between these issues of object-involvement, on the one hand, and the problem of supplying a predicate for every property, on the other hand. There is therefore no reason to think that a proposal which responds to the former concern will also respond to the latter. We can press this point in two stages.

First, as just noted, Hofweber's proposal most directly responds to worries about the properties expressed by relational predicates like 'is greater than v ' or 'tastes better than v '. But what about the properties expressed by *monadic* predicates? Ancient Greek doesn't, on the face of it, have translations of monadic predicates like 'electron', 'quasar', 'nucleotide', or 'drone pilot'. So even if Hofweber's proposal provides the substitutionalist with resources to capture the properties expressed by predicates like 'tastes better than Diet Pepsi' that involve relational expressions (more on this next), this as yet doesn't allay the concern that there may still be properties expressed by monadic predicates like 'nucleotide' that escape the substitutionalist's net. This concern would subside if it were possible to show that the relational predicates available in Ancient Greek suffice to express these properties. That seems like a tall order, however.

Second, and more importantly, even if we restrict our attention to relational predicates, there is still no guarantee that English has all the necessary predicates. Hofweber's thought is that even if a language does not contain a translation of 'tastes better than Diet Pepsi', it will contain a translation of 'tastes better than'. We can then use this relational predicate together with one of our special variables to construct a predicate that, given the appropriate assignment, expresses the property expressed by 'tastes better than Diet Pepsi'. But this still requires that every language have a translation of 'tastes better than'. Of course, any language spoken by human beings is likely to satisfy *this* requirement. But that is an artifact of the particular example. Though Ancient Greek has a translation of 'tastes better than', it presumably doesn't have a translation of 'has a greater charge than' or 'differs by one base-pair from'. What assurance do we have that every language contains a translation of all the polyadic predicates that would be needed for the expression of

all the properties available on the property-based account?²¹

My point is that simply adding predicates with free nominal variables into the substitution class gives us no guarantee that the substitution class will then contain a predicate for every property. That's simply because, to get a predicate, we need not only nominal expressions but also predicative expressions, like 'tastes better than' or 'is greater than', whose argument positions the relevant nominal expressions fill. If a language fails to have the necessary predicative vocabulary, then adding all the nominal variables one wants will be of no help. Of course, we might modify the proposal by also allowing predicative variables — not just 'is greater than v ', but also 'is *that*', with 'that' functioning predicatively. But this now just throws us back to the question with which we began, namely how to give an account of the semantic function of predicative variables without taking them to denote properties relative to an assignment, as the property-based account does. I therefore don't believe that Hofweber's proposal ultimately offers the substitutionalist a convincing way to allay worries about insufficient generality.

2.6 Beyond Substitutionalism

The appeal of the substitutional account was that it promised a treatment of predicative quantification compatible with the syncategorematic approach to the semantics of predicates that Davidson favors. As we've seen, however, the substitutional account in the end doesn't live up to its promise: although it allows us to avoid construing predicative quantifiers as quantifying over properties, we have found no guarantee that it does any better than substitutional accounts of nominal quantification in securing sufficient generality. Indeed, we might well wonder whether any account of quantification into a given position can avoid associating the expressions fit to occupy that position with entities of some sort.

There is, I think, something to this worry. I've already mentioned Davidson's claim that "the issue of ontology is forced into the open only where the theory finds quantificational structure" (Davidson, 1977). Although intended as a remark about nominal quantification, we can equally well apply it to non-nominal cases. What lies behind Davidson's claim is the thought that as long as one is dealing with a

²¹The problem could be avoided if we allow into our substitution class the predicate 'instantiates v ', where v may take any property as its value. This is surely a Pyrrhic victory, however. Going this route, we could quite generally substitute 'instantiates v ' for our predicative variable, and let the assignment function uniformly assign properties to our special variable ' v '. This rather looks like it's just a prolix version of the property-based account, however.

language that has a finite stock of expressions of a certain type and no resources for quantifying into the position occupied by those expressions, there may be nothing that forces us to construe those expressions as denoting entities of any sort. In particular, since the stock of expressions in question is finite, it may well be possible to meet the requirement of finite axiomatizability by simply adding a syncategorematic clause for each expression, specifying the particular way in which it impacts the truth conditions of sentences in which it occurs.

Matters change if we allow variables in a certain position, and quantifiers that bind those variables. A variable of a given type should be able to mimic the semantic contribution of any constant of that type, even if no constant present in the language actually makes that contribution. Once we have variables of a certain type, we therefore need to specify the range of *possible* semantic contributions that can be made by expressions of that type, and offer a *general* account of the semantic impact that any expression making such a contribution has on larger structures in which it occurs. This is something that no piecemeal list of syncategorematic clauses, one for each expression actually present in the language, accomplishes. We can, however, achieve what is needed if we associate entities of some sort with the expressions in question. For then we can appeal to those entities both to specify the range of possible semantic contributions that can be made by expressions of the relevant type, and to give a general account of the semantic impact that any expression of that type has on larger structures in which it occurs.²²

Take the property-based approach to predicative quantification. If we associate predicates with properties, we readily accomplish both tasks. First, we can let properties comprise the range of semantic contributions that a predicative expression *could* make, even if none actually makes it. Formally, this will mean that we will allow any property to function as the value of a given predicative variable, relative to some assignment. And second, we are in a position to explain, in general terms, the semantic impact any predicative expression has on the truth conditions of sentences in which it occurs, since we can now say that any sentence of the form $\ulcorner \phi(\alpha) \urcorner$ is true just in case the item denoted by α has the property denoted by ϕ . The overarching point, again, is that the need to account for quantification into a particular

²²Such a notion of the *possible* semantic contribution of an expression is also appealed to in MacFarlane (2000) discussion of the model theoretic account of logical consequence. Indeed, the above remarks are in many ways an application, to the case of quantification, of similar issues that arise in connection with the model theoretic account of logical consequence, where one also has to specify the kind of entities that the interpretation function of the model can assign to expressions of various types. See Etchemendy (1999) for a discussion of the shortcomings of a substitutional approach to logical consequence.

position places a pair of demands on us which a piecemeal list of syncategorematic clauses isn't well placed to answer, but which are straightforwardly answerable if we move to a denotational account of the semantic function of expressions of the relevant type.

It is for this reason that a certain twist on the substitutional account — one that is often offered as a way for substitutionalism to avoid problems of restricted generality²³ — also strikes me as something of a red herring. The thought behind *quasi-substitutionalism*, as I'll call it, is that the substitutional account only suffers from the problem of insufficient generality because it attempts to give an account of quantification in terms of the expressions *actually* present in the language. To avoid this problem, so the thought goes, the substitutionalist just has to expand her view beyond the language as it actually is, and towards possible *extensions* of the language.

There is nothing wrong with quasi-substitutionalism *per se*. Looking towards possible extensions of a language is indeed one way of avoiding worries about insufficient generality. The trouble is just that once such an account is fully spelled out, it will incorporate the same kind of machinery that is present in non-substitutional accounts. This is because the quasi-substitutionalist has to first, specify what is to count as an extension of the language along the relevant dimension, and second, give an explanation of what truth in any such extension amounts to. It won't, for example, do to simply offer the following substitutional clause for the particular predicative quantifier:

$\ulcorner \exists Y \psi \urcorner$ is true on g in English iff there is some language \mathcal{L} extending English which contains a predicate ϕ such that $\psi[\phi/Y]$ is true on g in \mathcal{L} .

Adding this clause does not adequately explain the truth conditions of a predicatively quantified sentence, because it does not tell us what range of languages count as extensions of English, or what is required for a sentence to be true (on g) in one of those extended languages \mathcal{L} .²⁴

²³See e.g. Geach (1962, p. 160).

²⁴Etchemendy (1999) also raises this point in his discussion of what makes for a well-behaved expansions of the object language. Suppose we want to consider an expansion that contains more names than the original object language. If names function to denote individuals, then “the range of possible names ... that could be incorporated into the object language [is] determined by the range of object that could be picked out or denoted by a name” (Etchemendy, 1999, p. 40). This requires that we see the category of names as unified by their semantic function. If we don't delineate the range of admissible names by appeal to the objects they can denote, we have no obvious means to exclude “names” like Etchemendy's ‘Nix’ “that we allow to occur in all and only positions that also

What the quasi-substitutionalist needs to do in order to provide an adequate account is to offer a *semantic* description of the respect in which English and the relevant extensions may differ. This will involve two things: (i) saying what to allow as possible semantic contributions of predicates in the extended languages, and (ii) saying how the truth conditions of any sentence containing a predicate that makes such a contribution are to be determined. We could, for example, construct a quasi-substitutional account by taking it that predicates denote properties, and then offering the following clause for the particular predicative quantifier:

$\ulcorner \exists Y \psi \urcorner$ is true on g in English iff there is some property p and some language \mathcal{L} such that $\text{Den}^g(\phi) = p$ in \mathcal{L} (where ϕ is the first predicate of English not occurring in ψ) and \mathcal{L} is otherwise like English, and $\psi[\phi/Y]$ is true on g in \mathcal{L} .²⁵

This proposal (paired with the property-based clause for atomic sentences) now does give us an adequate explanation of the truth conditions of predicatively quantified sentences. But of course this quasi-substitutional account is just a notational variant of the property-based account: it simply lets languages that differ in certain clearly specified respects from the language mentioned on the left hand side of the biconditional (viz. English) do the work that, on the property-based account, is done by assignment functions that differ in certain clearly specified respects from the assignment function mentioned on the left hand side of the biconditional (viz. g). Again, this isn't to say that there is something wrong with quasi-substitutionalism. It is only to say that it is something of a red herring which threatens to distract us from the real issue we have to confront when looking for alternatives to the property-based account of predicative quantification: how to explain, in general terms, the semantic function of predicates, and how to make sense of the notion of a possible semantic contribution that, although not actually made by any predi-

admit 'Abe Lincoln' " but which is such that "every sentence containing 'Nix', including 'Nix was president or Nix was not president', is simply false" (Etchemendy, 1999, p. 40). When it comes to predicates, the property-based theorist would be able to delineate the range of predicates that could be added to a language by appeal to the properties they can denote. But if predicates don't function to denote, then it is unclear how to constrain the range of admissible extensions of the object language, and how to give a general explanation of what truth in such an extension amounts to.

²⁵We assume some effective enumeration of predicates. (A "language" is here meant to be not just syntactic object, but an interpreted language — that is, a language in the syntactic sense together with a semantics.) Compare Mates (1972), who is to my knowledge the first to have offered a precise formulation of the quasi-substitutionalist approach to quantification.

cate, nevertheless could be made by a predicate, while at the same time not treating predicates as denoting properties.

2.7 The Ockhamist Alternative

Let's therefore return directly to that issue. Our first task is to offer a single compositional clause of the following form to govern atomic sentences:

for any nominal expression α and predicative expression ϕ , $\ulcorner \phi(\alpha) \urcorner$ is true on g iff ...

The property-based account completes the clause by saying that $\ulcorner \phi(\alpha) \urcorner$ is true on g iff $\text{Den}^g(\alpha)$ instantiates $\text{Den}^g(\phi)$. The question is whether there is a completion of the clause that doesn't rely on having predicates denote properties.

In fact there is, and the syncategorematic treatment of predicates points the way. Davidson's syncategorematic approach is, as we saw, motivated by Tarski's (1935) idea of taking objects to satisfy sentential functions, or open sentences. We get the syncategorematic treatment if we replace talk of an object's satisfying an open sentence with talk of an assignment function's satisfying a sentence (or of the sentence's being true relative to an assignment). We might, however, take Tarski's idea in a different direction. Rather than think of objects as satisfying *sentences*, we could think of objects as satisfying *predicates*, or of predicates as applying to objects. We would then pair each predicate with a specification of the condition under which the predicate applies to an object. In the case of 'Happy', we would, for example, say:

for any a , $\text{App}(\text{'Happy'}, a)$ iff a is happy.

(Ultimately, we will want to relativize application to an assignment, just as we do denotation. I leave this out of the picture for now, to be taken up when we look at how to extend the view to handle predicative quantification.)

Let me pause for a moment to take note of an important difference between the view we are here considering, and the property-based alternative. On the property-based view, a predicate is semantically associated with a *single* item, just as a name is semantically associated with a single item (though usually one of a different kind). On the present view, by contrast, predicates are, in a sense, semantically associated with *many* things. In fact, the idea that predicates denote multiply, or as Quine (1960) puts it, have "divided reference," has a long history going back to

the Aristotelian “term logic” on which the difference between names (or “singular terms”) and predicates (or “general terms”) was understood primarily as a difference in the number of things they denote. Some examples, in descending historical order, include the following:

We shall use “denotation” here [in the sense] according to which predicates are said to denote the objects to which they apply. E.g. ‘dog’ can be said to denote severally the particular dogs Marni, Randy, Fido, etc. What are ordinarily regarded as class names thus come to denote severally the members of the class but not the class itself.²⁶

A *general* name is a name which is capable of being correctly affirmed ... of each of an indefinite number of things ... A *singular* or *individual* name is a name which is capable of being correctly affirmed ... of only one thing.²⁷

It is not unusual, by way of explaining what is meant by a general name, to say that it is the name of a *class*. But this, though a convenient mode of expression for some purposes, is objectionable as a definition, since it explains the clearer of two things by the more obscure. It would be more logical to reverse the proposition, and turn it into a definition of the word *class*: “A class is the indefinite multitude of individuals denoted by a general name.”²⁸

Those ideas which only represent a single thing are called *singular* or *individual*, and the things they represent individuals; and those which represent many individuals are called *universal*, *common*, or *general*. The names which we employ to mark the first are called *proper*, as *Socrates*, *Rome*, *Bucephalus*; and those which are employed to mark the last, *common*, and *appellative*, as *man*, *town*, *horse*; and the universal idea, as well as the common names, may be called *general terms*.²⁹

In ‘every man is an animal’ the word ‘man’ supposits for its significata; for ‘man’ is not used to signify anything other than men. It does

²⁶Martin (1958, p. 99).

²⁷Keynes (1887, §I.I.6).

²⁸Mill (1843, §I.II.3).

²⁹Arnauld and Nicole (1850, §I.VI).

not signify something common to them. As Damascene says, it just signifies the men themselves.³⁰

Though the use of ‘denotes’ and the like for a *non-functional* relation is likely jarring to the ears of contemporary readers, this use, as the above examples show, was for a long time not uncommon. As the examples likewise show, however, such a use is also liable to obscure the semantic difference between names and predicates. It seems to me desirable to keep this distinction more firmly in view.³¹ Going forward, I will therefore reserve ‘denotes’ for the functional relation that relates a singular term to an object, and continue to use ‘applies to’ for the non-functional relation that relates a predicate to (possibly multiple) objects.

Given this view of the semantics of predicates, we can then complete our compositional clause as follows (again leaving assignment functions out of the picture for the moment):

$$\ulcorner \phi(\alpha) \urcorner \text{ is true iff } \text{App}(\phi, \text{Den}(\alpha))$$

Given that $\text{Den}(\text{‘oscar’})$ is Oscar, and that $\text{App}(\text{‘Happy’}, a)$ iff a is happy, we have the result that ‘Happy(oscar)’ is true iff Oscar is happy. In effect, the above clause tells us that a subject-predicate sentence is true just in case the item denoted by the subject expression is identical to one of the items the predicate applies to.³² Views along these lines have sometimes gone under the label of the “identity theory of predication” or “two-name theory of predication.” Ockham, for example, defended such a view in his *Summa Logicae*:

For the truth of ‘this is an angel’ ... it is sufficient and necessary that the subject and predicate supposit for the same thing. ... Similarly,

³⁰Ockham (1974, §64).

³¹One concern is that we run the risk of losing our semantic grip on the difference between a predicate that “denotes” only one thing, and a name that denotes that same thing. If we distinguish application from denotation, we can distinguish the two by saying that whereas the name denotes the item in question, the predicate applies to it. Though it would take us too far afield to discuss the matter in detail, this concern is apt to become particularly acute when it comes to distinguishing predicative from non-predicative occurrences of definite descriptions. See Chapter 2 and Rieppel (2012) for further discussion predicative definite descriptions, and of why it may be advisable (even on the property based view!) to distinguish the semantic relations appropriate to predicates and singular terms. A related worry is that using ‘denotes’ across the board threatens to obscure the fact that predicates which fail to “denote” anything aren’t semantically defective in the way empty names are. I return to this in §2.8 below.

³²We could, that is to say, equivalently state our compositional clause as follows: $\ulcorner \phi(\alpha) \urcorner$ is true iff $\exists x(\text{Den}(\alpha) = x \wedge \text{App}(\phi, x))$.

by means of propositions like ‘Socrates is a man’ and ‘Socrates is an animal’ it is not asserted that Socrates has humanity or animality ... Rather it is asserted that he is a thing for which the predicate ‘man’ or the predicate ‘animal’ stands or supposits. For both of these predicates stand for Socrates.³³

Without pretending to historical accuracy, I’ll therefore label the proposal we’re developing the Ockhamist Account of predication.³⁴

Having provided a compositional clause to govern atomic sentences, our second task is to provide a clause to govern predicatively quantified sentences that specifies all the *possible* semantic contributions a predicative expression can make, and interacts properly with the theory of predication we’ve already constructed. As we’ve seen in passing, standard semantic clauses for nominally quantified sentences make use of a shiftable assignment function, that is, a function which assigns individual items to nominal variables. When it comes to predicative quantification, it will be helpful to make use of a parallel device. However, since application, unlike denotation, is a non-functional relation, our clause for predicative quantification will not appeal to an assignment *function*, but rather an assignment *relation*. I will therefore continue to use g to represent the assignment function that assigns objects to nominal variables, and use h to represent the assignment relation that assigns objects to predicative variables. Given an assignment function g and assignment relation h , we can then relativize denotation and application to these parameters. Such relativization will have no effect on the denotation- and application-clauses we give for constants like ‘Oscar’ and ‘Happy’, but allows us to give denotation- and application-clauses for nominal and predicative variables:

for any nominal variable v , $\text{Den}^g(v) = g(v)$.

for any a and predicative variable Υ , $\text{App}^h(\Upsilon, a)$ iff $\langle \Upsilon, a \rangle \in h$.

Our clause for predicative quantification then has to specify an assignment relation h' that differs from h in some specific respect, just as the clause for nominal

³³Ockham (1980, §2).

³⁴For a useful overview of Ockham’s semantics, see Klima (1999) and the introductory essays in Ockham (1980) and Ockham (1974). For discussion of the historical development of the “two-name” theory from Aristotle onwards, as well as of the doctrine of supposition and (later) distribution that accompanied it (along with criticism of that doctrine), see Geach (1956) and Geach (1968). A much more recent example of the “two-name” theory can be found in Larson and Segal (1995).

quantification specifies an assignment function g' that differs from g in some specific respect. In other words, we need to find a way to complete the ellipses a clause of the following form:

$\ulcorner \exists Y \psi \urcorner$ is true on g and h iff there is some and some assignment relation h' such that for all a [$\langle Y, a \rangle \in h'$ iff ... a ...] and h' is otherwise like h , and ψ is true on g and h' .

There are a number of ways in which we might do this, but not all of them are equally acceptable.

We wouldn't, for instance, want to appeal to predicates of the object language, and say that there is some predicate ϕ in the object language and some h' such that for all a [$\langle Y, a \rangle \in h'$ iff $\text{App}^h(\phi, a)$]. To do that would be to restrict the range of possible semantic contributions of predicative expressions to the semantic contributions made by predicates present in the object language, which is exactly what caused the problems for the substitutional account. We also wouldn't want to appeal to properties, and say that there is some property p and some h' such that for all a [$\langle Y, a \rangle \in h'$ iff a instantiates p]. This rather misses the motivation behind providing an alternative to the property-based account, since we would once again be giving an account of the possible semantic contributions of predicative expression by appeal to properties, and would in that sense be treating predicative quantifiers as quantifying over properties.

There is, however, a way to achieve what we want without running into any of these problems. If we look back at the clause that specifies which objects 'Happy' applies to, we see that we didn't provide that specification by mentioning a predicate already present in the language, or by mentioning a property that each of those object instantiates. (That is, we didn't e.g. say that $\text{App}(\text{'Happy'}, a)$ iff a instantiates the property of being happy.) Rather, we specified which objects 'Happy' applies to by simply *using* a predicate, i.e. by saying that 'Happy' applies to a just in case a is *happy*. Similarly, we can specify which objects a given assignment relation relates to a given predicative variable by simply using a predicative quantifier in the metalanguage, as follows:³⁵

$\ulcorner \exists Y \psi \urcorner$ is true on g and h iff there is *something* and some assignment relation h' such that for all a [$\langle Y, a \rangle \in h'$ iff a is *that*] and h' is otherwise like h , and ψ is true on g and h' .

³⁵The condition that h' be otherwise like h is here shorthand for: $\forall Y' (Y' \neq Y \rightarrow \forall a (\langle Y', a \rangle \in h' \equiv \langle Y', a \rangle \in h))$.

This clause has a somewhat awkward ring to it because it isn't initially clear that our metalinguistic 'something' is meant to function as a predicative quantifier. We could make this clearer by saying that $\ulcorner \exists Y \psi \urcorner$ is true on g and h iff there is *something an object might be* and some h' such that for all a [$\langle Y, a \rangle \in h'$ iff a is *that*] and h' is otherwise like h , and ψ is true on g and h' . Putting it all together, our Ockhamist alternative to the property-based account now looks as follows:

Denotation

$\text{Den}^g(\text{'oscar'}) = \text{Oscar}$.

for any nominal variable v , $\text{Den}^g(v) = g(v)$.

Application

for any a , $\text{App}^h(\text{'Happy'}, a)$ iff a is happy.

for any a and predicative variable Y , $\text{App}^h(Y, a)$ iff $\langle Y, a \rangle \in h$.

Truth for Atomic Sentences

$\ulcorner \phi(\alpha) \urcorner$ is true on g and h iff $\text{App}^h(\phi, \text{Den}^g(\alpha))$

Truth for Quantified Sentences

$\ulcorner \exists v \psi \urcorner$ is true on g and h iff there is some object a and assignment function g' such that $g'(v) = a$ and g' is otherwise like g , and ψ is true on g' and h .

$\ulcorner \exists Y \psi \urcorner$ is true on g and h iff there *something* and some assignment relation h' such that for all a [$\langle Y, a \rangle \in h'$ iff a is *that*] and h' is otherwise like h , and ψ is true on g and h' .

2.8 Boolos, Pluralities, and Semantic Values

The clause I've here given for predicative quantification owes a lot of its inspiration to a parallel clause that Boolos (1985) offers in the course of providing a formal semantics for (monadic) second-order logic, specifically, in the way that it exploits quantification into predicate position in the metalanguage in order to give

the semantics of object language quantifiers that bind variables in predicate position. Despite this parallel, the Ockhamist Account differs from Boolos' proposal in an important respect.³⁶

The difference I have in mind has to do with the broader philosophical framework in which Boolos' proposal is couched. In his (1984) and (1985), Boolos suggests that we can "read" formulas of second-order logic using English *plural* expressions. The second-order quantifier in ' $\exists X(Xx)$ ' should, for example, be read using the English plural quantifier 'there are some things such that', with the formula as a whole saying that there are some things such that x is one of them. (The thought being that we can, in this way, avoid unwanted ontological commitments: the claim that there are some things such that x is one of them seems to commit us only to x and those things, but not to any set or class of which x is a member. Second-order logic is thus allegedly shown not to be "set theory in sheep's clothing.")

This suggests that one should read the metalinguistic second-order quantifier appearing in Boolos' semantic proposal as a plural quantifier, rather than as the predicative quantifier involved on our Ockhamist Account. It is, in other words, as if we had offered the following clause to govern predicative quantification:

$\ulcorner \exists Y \psi \urcorner$ is true on g and h iff there are *some things* and some assignment relation h' such that for all a [$\langle Y, a \rangle \in h'$ iff a is *one of those things*] and h' is otherwise like h , and ψ is true on g and h' .

Similarly, it is as if we were to replace our clause for e.g. 'Happy' with one that says that 'Happy' denotes (or applies to) *the happy things*. This approach to the matter looks strikingly similar to the one we actually pursued. On both views, a predicate does not denote some *single* item (such as a property or a set) that encapsulates the generality of the predicate, but rather denotes (or applies to) *multiple* items. The similarity is only skin-deep, however. This becomes clear if we reflect on a certain difficulty encountered by the Boolosian approach.

The difficulty has to do with the fact that, as Boolos (1984) notes, in order for it to be true that there e.g. are some gunslingers who shot themselves in the foot, there has to be at least one gunslinger. More generally, in order for it to be

³⁶Another difference, besides the one I shall discuss presently, is that Boolos (1985) pairs his account of second-order quantification with a syncategorematic treatment of atomic predicates (of which there are just two in the language of set theory that he is concerned with, namely '=' and ' \in '), and treats the metalinguistic quantifier over assignment relations as a (monadic) second-order quantifier.

legitimate to speak about the xx 's, there has to be at least one thing that is one of those xx 's — there are, in other words, no “empty pluralities.” The trouble is that the formula $\exists X \forall y \neg (Xy)$ then comes out false upon translation into plural terms: it simply is not the case that there are *some things* such that nothing is one of them. The Ockhamist, by contrast, who uses predicative quantifiers rather than plural quantifiers, faces no such problem, since he can allow that there is *something* which no object in fact is (e.g. a gorgon).³⁷

There is, thus, a substantive difference between pluralities and the things objects might be, so to speak, and correspondingly, a reason to prefer the use of predicative quantifiers over plural quantifiers when giving the semantics of predicative quantifiers in the object language. So although the Ockhamist approach and the Boolosian approach share a certain resemblance, insofar as both treat predicative expressions as denoting (or applying to) multiple entities, that resemblance is superficial. These considerations also highlight the fact that there would be something misleading about taking it that the multiple objects the Ockhamist Account associates with a given predicative expression are the *semantic values* of that expression. The idea is encouraged by a certain parallel between the treatment of nominal and predicative expressions: since the object that the denotation relation (or the assignment function g) associates with a given nominal expression is said to be the semantic value of that expression, we might be inclined to think that the multiple objects the application relation (or the assignment relation h) associates with a given predicative expression are likewise the semantic values of that expression. But in the end, this seems to me the wrong way to look at it.

Consider, for instance, the semantics an Ockhamist will propose for the predicate ‘gorgon’. He will say that ‘gorgon’ applies to a just in case a is a gorgon. Since there are no gorgons, this predicate will fail to apply to anything. Thus, if we were to take it that the objects a given predicate applies to are its semantic values, we would have to say that ‘gorgon’ has no semantic values. But that is surely misleading. To say that an expression has a semantic value is to say that it has a meaning, or that it has a determinate impact on the truth conditions of sentences in which it occurs. And of course, the fact that ‘gorgon’ fails to apply to any objects

³⁷Boolos (1984) proposes to get around the difficulty by requiring that sentences of the form $\exists X \psi$ be translated into plural terms via the disjunctive $\exists xx (\psi^*) \vee \psi^{**}$, where ψ^* results from ψ by substituting $\ulcorner \alpha \prec xx \urcorner$ for every occurrence of $\ulcorner X\alpha \urcorner$ (with \prec meaning ‘is one of’), and ψ^{**} results from ψ by substituting $\ulcorner \alpha \neq \alpha \urcorner$ for every occurrence of $\ulcorner X\alpha \urcorner$. The formula $\exists X \forall y \neg (Xy)$ would thus be translated not into the false $\exists xx \forall y \neg (y \prec xx)$, but rather into the true $\exists xx \forall y \neg (y \prec xx) \vee \forall y \neg (y \neq y)$. See Rayo (2006) for discussion of the moves the friend of the plural interpretation of second-order logic needs to make here.

doesn't show that it fails to be meaningful, or that it is semantically defective in the way that a singular term which fails to denote anything is.

What, then, is the meaning, or semantic value, of a predicate on the Ockhamist view? One kind of answer suggests itself if we again consider the result of appealing to properties to “fill in” the formal apparatus of the Ockhamist Account. We would then say that e.g. ‘Happy’ applies to a just in case a instantiates the property of being happy, and that the assignment relation h' appealed to in the clause governing predicative quantification is such that for some property p , h' is such that for all a [$\langle Y, a \rangle \in h'$ iff a instantiates p]. On this way of filling things in, it would still be true that a predicative expression is associated with multiple objects. But there is now even less temptation to say that those objects are therefore the semantic values of the expression, since we can instead point to properties as the things playing that role. This suggests that we should identify the semantic values an Ockhamized semantics associates with predicative expressions by looking at the things it appeals to in specifying the conditions under which the assignment relation h' relates a predicative variable to an object a , and the things it appeals to in specifying the conditions under which a particular predicate applies to a given object a . The friend of properties says that for e.g. ‘Happy’ to apply to a , a must instantiate the property of being happy, and so takes properties to be the semantic values of predicates. The friend of pluralities says that a must be one of the happy things, and so takes pluralities to be the semantic values of predicates. The Ockhamist, by contrast, just says that a must be *happy*. So if we have to identify something as the semantic value of a given predicate, on the Ockhamist view, it would seem to be whatever any object has to *be* in order for the predicate to apply to it — something like *happy*, or *a gorgon*.

Here's the rub, though: to say that e.g. *happy* is the semantic value of ‘Happy’ isn't to say something grammatical at all. *Happy* is a “thing” only in the attenuated sense that it is *something* Oscar might be, but not in the more demanding sense that would be required for it to properly interact with a noun like ‘semantic value’.³⁸ So although there would appear to be something correct in the idea that, on the Ockhamist view, the semantic value of a predicate is whatever an object has to be for the predicate to apply to it, there is also a peculiar problem when it comes to expressing that idea in coherent terms.³⁹

³⁸The thought, in other words, is that ‘... is the semantic value of ...’ (or ‘... denotes ...’) requires singular terms for completion. See the examination of the Fregean's predicament in Chapter 2 for further discussion of this point.

³⁹The difficulty we've here encountered is of course highly reminiscent of Frege's troubles with the concept *horse*, and with the denotation of predicates in general. In fact, Frege in at least one in-

The message we ought to take away from the Ockhamist Account is that there is a coherent way of thinking about the semantics of predicates and predicative quantifiers on which the question of what kind of *thing* a predicate has as its semantic value, or of what *things* predicative quantifiers quantify over, simply fails to get a grip.⁴⁰ The right answer, on the Ockhamist view, is that predicates just don't work like that. Predicates may apply to things, but the demand that we identify an entity of some sort to serve as the meaning, or semantic value, of a given predicate is simply misplaced, and not one we need to respond to in order to give a systematic semantics for predicates and predicative quantifiers.

The Ockhamist Account therefore looks to give us what a Davidsonian nominalist wants, since it offers us a theory of meaning which doesn't treat predicates as having "entities as meanings" or having "meanings at all, in any sense that transcends the fact that they have a systematic effect on the meanings of the sentences in which they occur" (Davidson, 1967). The one place where the Ockhamist departs from Davidson is that he doesn't subject predicates to a syncategorematic treatment.⁴¹ But as we saw in our discussion of Davidson on the Problem of Predication, the insistence that predicates be treated syncategorematically isn't well-

stance motivates his claim that predicates denote *concepts* (rather than objects) in part by registering a dissatisfaction with the (at the time traditional) view that predicates "multiply refer" to individual objects. See the last two paragraphs of Frege (1997). We will have occasion to return to the question of the relation between the Ockhamist Account and a Fregean view of predication in Chapter 2.

⁴⁰Compare the discussion of second-order logic in Williamson (2003). Williamson also concludes that we should "reject as misconceived" such questions as "What does quantification into predicate position quantify over?" and "What are the values of variables in predicate position." He goes on to suggest that second-order quantifiers may therefore have no "wholly satisfactory" reading in natural language. English predicative quantifiers would, however, seem to give us a way to read at least monadic second-order quantifiers. Rayo and Yablo (2001) argue that there are also ways of reading polyadic second-order quantifiers in natural language. The grammaticality of the examples they offer seems to me dubious, however.

⁴¹We should at this juncture note that there may be a way to learn our lesson from the Ockhamist while sticking with a syncategorematic treatment of predicates. The thought would be to follow the Ockhamist in using predicative quantification in the metalanguage, but to do so in the context of what I above called the quasi-substitutional approach, as follows:

$\ulcorner \exists Y \psi \urcorner$ is true on g in English iff there is *something* and some language \mathcal{L} such that $\forall \alpha (\ulcorner \phi(\alpha) \urcorner$ is true in \mathcal{L} iff $\text{Den}^g(\alpha)$ is *that*) and \mathcal{L} is otherwise like English, and $\psi[\phi/Y]$ is true on g in \mathcal{L} (where ϕ is the first predicate of English not occurring in ψ).

The question, however, is what substantive *gain* there would be in this effort to retain a syncategorematic treatment, given that the Ockhamist already provides us with a way to avoid the need to assign entities as the semantic values of predicates.

motivated to begin with. What *is* essential is that a semantics not merely include denotation clauses (or even application clauses) for various lexical items, but that it also include compositional clauses that ultimately let us derive truth conditions for complete sentences. And *this* is of course a requirement that the Ockhamist meets just as much as the syncategorematic alternative.

2.9 Looking Ahead

Let's briefly reflect on how we got here, and where we now stand. We began by asking whether it is possible to overcome the apparent difficulty the nominalist's claim that predicates fail to denote anything poses for him when it comes to accounting for predicative quantifiers: is there a way to give a semantics for such quantifiers that avoids the need to regard them as quantifying over anything? Our first attempt paired a syncategorematic treatment of predicates of the sort favored by Davidson with a substitutional account of predicative quantification. I argued that although the substitutionalist can overcome certain difficulties that have occasionally been raised against substitutional quantification, she cannot ultimately offer us a guarantee that her proposal manages to capture the full range of generality predicative quantification arguably involves. We then asked what alternatives there might be to the substitutional view, and proceeded to develop one in the form of the Ockhamist Account, which uses predicative quantification in the metalanguage to give the semantics of such quantifiers in the object language. As we've seen, the Ockhamist makes good on the nominalist's claim the predicates fail to denote, and that predicative quantifiers fail to quantify over, entities of any kind. We thus answer our initial question in the affirmative.

The question to which I now want to return is whether we really need to go with the Ockhamist Account. If we grant, as we have been, that properties do indeed exist, then the view that they are nevertheless not implicated in the semantics of predicates and predicative quantifiers seems almost perverse. At the very least, it needs some justification. Davidson's own worries, deriving from the Problem of Predication, do not, as we saw, offer us convincing grounds for abandoning the property-based view in favor of the Ockhamist alternative. In the ensuing chapters, we will consider whether the objections I laid out in the Introduction fare better in this regard.

3 Denotationalism and its Discontents

3.1 The First Objection

The view that predicates denote properties while names denote the individual objects that have those properties is an eminently natural one. On the face of it, there certainly seems to be a close connection between the linguistic category of predicates and the ontological category of properties. Just as predicates can be combined with many different names to form true sentences, for example, so properties can be instantiated by many different objects, and the claim that e.g. Oscar is happy does seem basically equivalent to the claim that he instantiates the property of being happy. The property-based view looks like a nice way to capture these kinds of connections.

And yet it is via such reflections that we also immediately encounter difficulties. For given that properties are denoted by *nominal* expressions like ‘the property of being happy’, and, correspondingly, quantified over in *nominally* quantified sentences ‘Alice has some property Oscar lacks’, they would appear to be just so many more *objects*. Simply appealing to properties therefore doesn’t seem like it will adequately get at the evident semantic difference between predicative and nominal expressions, or between properly predicative quantification and nominal quantification over properties. Indeed, as we’ve had occasion to note before, properties seem clearly *not* to be what predicative quantifiers quantify over: if there is something Oscar is, then that may be because he is happy, but it surely isn’t because he is the *property* of being happy. Properties, in other words, are what we appeal to in specifying what witnesses the truth of certain nominally quantified sentences, but they are precisely not what we appeal to in specifying the truth of predicatively quantified sentences. Something seems to have gone awry.

We can sharpen this objection as follows. Let us take it for granted that the

expression ‘the property of being happy’ denotes the property of being happy, and more generally, that ‘denotes’ functions disquotationally when applied to nominal expressions. Given this assumption, it is now not open to us, so the objection goes, also to regard ‘happy’ as denoting that property. For if ‘happy’ and ‘the property of being happy’ both denote the property of being happy, one would expect substitution of one for the other to preserve truth, which it evidently doesn’t:

- (3.1) (a) Oscar is [happy].
 (b) Oscar is [the property of being happy].

The initially appealing view that predicates denote properties, and that predicative quantifiers quantify over them, therefore looks like it has to be given up.

We might react to this problem by simply abandoning the view that predicates have the semantic function of denoting at all. This kind of move makes it initially unclear how we might then understand quantification into predicate position, since it won’t allow us to construe such quantifiers as quantifying over anything. But as we saw in the last chapter, the Ockhamist Account offers us a way to respond to this challenge. The question I want to address in this chapter is whether the substitution failure we’ve here encountered really does force us accept the Ockhamist’s way out. Is there, in other words, a way to deal with the substitution failure while still holding on to the idea that there are things which predicates denote, and which predicative quantifiers can accordingly be construed as quantifying over?

One option is adopt a Fregean approach to the matter, and to conclude that the postcopular expressions in (3.1a) and (3.1b) must denote different things. Our substitution failure, the Fregean claims, doesn’t show that predicates fail to denote, but rather that we haven’t drawn a fundamental enough distinction between the things nominal and predicative expressions denote. Properties, the Fregean holds, are objects of a certain sort, denoted by nominal expressions like ‘the property of being happy’ and quantified over in certain nominally quantified sentences. Predicates like ‘happy’ denote items of a fundamentally different kind — what Frege termed *concepts*. The Fregean thus seeks to retain a denotationalist view of predicates, while granting that we ought to abandon the property-based approach: predicates do denote, but the things denoted by predicates, and quantified over by predicative quantifiers, aren’t properties, but items of a fundamentally different kind.

There are at least two alternatives to the Fregean’s take on our substitution failure that seem worth considering, however. What the substitution failure makes quite clear is that we can’t *simply* claim that ‘happy’ and ‘the property of being happy’ denote the same thing, and leave things there. But rather than join the Fregean in

rejecting the view that predicates denote properties, we might instead try to explain our substitution failure on *syntactic* grounds. By drawing a purely syntactic distinction between nominal and predicative expressions, we might be able to explain the substitution failure while continuing to maintain that ‘happy’ and ‘the property of being happy’ are *semantically* alike in denoting a property.

A different, and more radical option would be to continue to construe the difference between nominal and predicative expressions in semantic terms, but to reject a thesis that informs much of the semantic theorizing that has been inspired by Frege, namely, that the truth-conditional impact of an expression is entirely determined by the item it denotes, and in particular, that the semantic difference between nominal and predicative expressions corresponds to a fundamental difference in the kind of thing such expressions denote. What I will want to argue in this chapter is that rejecting this thesis of Strict Denotationalism doesn’t just represent a possibility in logical space, but is, despite its more radical nature, superior both to the Fregean approach and the syntactic alternative.

The structure of the chapter is as follows. I begin, in the next section, by laying out more of the details of the Fregean proposal. Having done that, I will then consider the prospects of avoiding the Fregean’s conclusion by offering a syntactically-based explanation of our substitution failure. As we shall see, the syntactic explanation fails, meaning that we do indeed need a semantic explanation.

The Fregean’s semantic proposal faces a considerable difficulty of its own, however. In particular, the character of the Fregean’s distinction between concepts and objects leaves him unable to say *which* concept it is that a given predicate denotes. For to complete the open argument position in e.g. “ ‘happy’ denotes ... ”, we have to use some *nominal* expression or other, and will thus invariably mention something of the wrong kind. Dummett (1973) famously proposed that the Fregean can avoid this problem by instead using *predicative* expressions to state the denotation of predicates. I will argue that the problem posed by the nominal character of the argument positions of ‘denotes’ reappears in a new guise in the context of Dummett’s proposal, and that it ultimately doesn’t offer the Fregean a satisfying way out.

I therefore conclude that we ought to pursue a solution along the lines of the third option mentioned above. The Fregean is right to hold that our substitution failure demands a semantic explanation, but rather than adopt the Strict Denotationalism, we should instead countenance semantic features of an expression beyond what it denotes. Briefly, the thought will be that we can explain our substitution failure, while continuing to maintain a broadly property-based view, by distinguishing the semantic *relations* predicative and nominal expressions bear to their semantic

values. Whereas nominal expressions like ‘the property of being happy’ *refer* to properties, predicates like ‘happy’ *express* or *ascribe* them. We can then say that predicative quantification differs from nominal quantification over properties not in terms of what is quantified over, as the Fregean supposed, but rather in terms of the semantic relation the bound variables bear to the properties they take as values.

3.2 The Fregean Proposal

The Fregean proposal regarding our substitution failure invokes a fundamental distinction between concepts and objects, which Frege explains as follows:

A concept is the *Bedeutung* of a predicate; an object is something that can never be the whole *Bedeutung* of a predicate, but can be the *Bedeutung* of a subject ... the behavior of the concept is essentially predicative ... consequently it can be replaced ... only by another concept, never by an object.¹

We can systematically develop Frege’s idea as follows.² We begin by taking two types of expression as primitive: the type of sentences, *S*, and the type of singular terms or names, *N*. It is assumed that we have a reasonably good pre-theoretic handle on what kinds of expressions belong to each category. Expressions of type *S* include things that, as we might say, express complete thoughts, like ‘Oscar is happy’, and expressions of type *N* include things like ‘Oscar’ that introduce objects about which we can go on to say something. Given these primitive types, we can then define derived types: if *X* and *Y* are types that are already defined, we may define a derived type $\langle X, Y \rangle$, that is, a type which takes *X* type expressions to yield *Y* type expressions. In particular, expressions like ‘happy’, which can combine with *N* type expressions like ‘Oscar’ to yield (together with the copula) the *S* type expression ‘Oscar is happy’, will be assigned to the derived type $\langle N, S \rangle$.³ It

¹Frege (1892, p. 187-189).

²Compare e.g. Evans (1982) and Ajdukiewicz (1935).

³The need for the copula is not universal. In Hungarian, for example, ‘Oscar is happy’ would translate as ‘Az Oscar boldog’ (“the Oscar happy”) which does not include a form of ‘van’, the verb for ‘to be’ (i.e. one doesn’t say ‘Az Oscar van boldog’ or ‘Az Oscar boldog van’). Indeed, even English allows omission of the copula in certain embedded contexts — ‘I consider Oscar happy’ is, for instance, just as grammatical as ‘I consider Oscar to be happy’ (more on this below) — and some dialects of English allow its omission in unembedded contexts as well, as in e.g. ‘You crazy!’. Frege himself, it should also be noted, regarded the copula “as a mere verbal sign of predication”

is important to notice that these types need not be assumed to correspond to syntactic categories. Syntactically, both ‘Oscar’ and ‘some dog’ are usually classified as Determiner Phrases (DPs), but whereas we have assigned ‘Oscar’ to type N , quantificational expressions like ‘some dog’ are assigned type $\langle\langle N, S \rangle, S\rangle$.⁴

This process is now recapitulated at the level of the denotation of various expressions. To our two primitive expression types, N and S , we respectively assign primitive denotation types, e (for ‘entity’) and t (for ‘truth value’). Denotations of type e are objects, like Oscar, and denotations of type t are the two truth values, the True and the False. To our derived expression types we assign derived denotation types. Thus, an expression of type $\langle N, S \rangle$, such as ‘happy’, will receive a denotation of type $\langle e, t \rangle$, that is, a denotation which takes an e type item and yields a t type item. We can translate this into Frege’s own terminology by saying that denotations of type e are *objects* whereas denotations of type $\langle e, t \rangle$ are (first-level) *concepts*.

Given this framework, the Fregean now proposes the following analysis of our substitution failure. The sentence ‘Oscar is happy’, he will say, is predicative, and involves a postcopular expression that denotes an $\langle e, t \rangle$ type item, that is, a concept. Such sentences are true just in case the concept denoted by the postcopular expression maps the object denoted by the precopular expression to the True. The sentence ‘Oscar is the property of being happy’, by contrast, is not a predicative sentence, but rather an *equative* sentence, that is, a statement of identity, like ‘Hesperus is Phosphorus’. This is because, as Frege puts it, “the singular definite article always indicates an object” (Frege, 1892, p. 184). And copular sentences that contain an object-denoting expression, rather than a concept-denoting expression, in postcopular position express identity claims rather than predicative claims.

Our substitution failure is thus explained by appeal to the claim that ‘happy’ and ‘the property of being happy’ denote items of a fundamentally different kind: whereas ‘the property of being happy’ denotes an *object* of a certain sort, namely, the property of being happy, the predicate ‘happy’ denotes a *concept*. The sentence ‘Oscar is happy’ is, again, predicative: it involves a postcopular expression that denotes a concept, and is true because the concept denoted by ‘happy’ indeed maps Oscar to the True. The sentence ‘Oscar is the property of being happy’ on the other hand, is equative: it involves an object-denoting expression in postcopular posi-

(in contrast to the ‘is’ of identity, whose “content is an essential part of the predicate”), and was accordingly content to say that in the sentence ‘The Morning Star is a planet’, the relevant “concept word” is ‘a planet’, rather than ‘is a planet’ (Frege, 1892, p. 194). The view that copular forms of ‘to be’ are semantically vacuous is not terribly controversial. See e.g. Mikkelsen (2008) and Heim and Kratzer (1998, §4.1).

⁴Though compare Montague (1973), who treats both as $\langle\langle N, S \rangle, S\rangle$ type expressions.

tion, and it is false, since Oscar is, of course, not identical to the property of being happy. The contrast between nominal and predicative quantification is then similarly construed as involving a difference in what is quantified over: whereas nominally quantified sentences involve quantification over objects (among which we include properties), predicatively quantified sentences involve quantification over concepts. The property-based view, according to which predicates denote properties and predicative quantifiers quantify over properties, therefore ought to be given up according to the Fregean.

3.3 A Syntactic Alternative?

The Fregean's proposal may invite the charge that, although the Fregean is right to invoke the distinction between equative and predicative sentences by way of explaining our substitution failure, we can draw that distinction by appeal to syntax alone, without relying on the Fregean's semantic distinction between concepts and objects. 'Happy', it will be noted, is an adjective, whereas 'the property of being happy' is a definite description. And whereas sentences containing adjectives in postcopular position involve predication, sentences that contain a definite description in postcopular position, it might be suggested, are syntactically required to be equative. That 'Oscar is happy' is predicative, whereas 'Oscar is the property of being happy' is equative, therefore doesn't have to do with to a fundamental difference in what the postcopular expressions denote, but with a difference in the syntax of those expressions. We could then explain our substitution failure while holding on to the idea that 'happy' and 'the property of being happy' *both* denote the property of being happy: the predicative 'Oscar is happy', we might say, is true because Oscar does *instantiate* the property of being happy, but 'Oscar is the property of being happy', which (so the proposal runs) is syntactically required to be equative, is false, since Oscar is not *identical to* that property.

This syntactic proposal fails, however, for two related reasons. The first problem is that definite descriptions are usually syntactically categorized as Determiner Phrases. DPs, however, include not only definite descriptions, but also indefinite descriptions, that is, descriptions beginning with the indefinite article 'a'. And it is usually taken for granted that indefinite descriptions can function as predicates. Frege (1892), for instance, takes it that the indefinite description 'a planet', as it occurs in 'The Morning Star is a planet', is a "concept word," and that the sentence as a whole expresses "the falling of an object under a concept." If this is right — and as we shall see momentarily, there is good reason to think that it is — it al-

ready spells trouble for the syntactic proposal.⁵ For if we allow that indefinite DPs can occupy postcopular position in predicative copular clauses, then the idea there is nevertheless a *syntactic* restriction which prohibits definite DPs from such occurrence would commit us to the non-standard view that syntactic restrictions may concern properties of an expression beyond its phrasal category.⁶

Second, the claim that definite DPs are indeed barred from predicative occurrence is itself by no means uncontroversial. Strawson (1950), for example, already noted that copular sentence containing definite DPs in postcopular position can have a distinctly predicative character to them: “if I said ‘Napoleon was the greatest French soldier’, I should be using the word ‘Napoleon’ to mention a certain individual, but I should not be using the phrase, ‘the greatest French soldier’ to mention an individual, but to say something about an individual I had already mentioned.”⁷ As a matter of fact, Strawson’s view enjoys considerable support from a number of tests for predicativity that have been proposed in the literature on copular clauses. I will look at three of those here.

3.3.1 Test 1: Coordination

Our first diagnostic involves coordination. The thought here is that if it is possible to coordinate a phrase with paradigmatically predicative phrases, such as the adjectives ‘clever’ and ‘audacious’, then that phrase is itself predicative:

- (3.2) (a) He is clever, audacious, and [vindictive]
 (b) He is clever, audacious, and [a brilliant strategist].

⁵Russell (1919) adopts a dissenting view. Right before his famous remark about its being “a disgrace to the human race that it has chosen to employ the same word ‘is’ for these two entirely different ideas”, he claims that whereas the ‘is’ in ‘Socrates is human’ “expresses the relation of subject and predicate”, the ‘is’ in ‘Socrates is a man’ “expresses identity” (Russell, 1919, p. 172). Russell is here not suggesting that the indefinite DP ‘a man’ functions to denote a particular person, or “the indefinite man”, but rather that ‘Socrates is a man’ can be read as ‘Socrates is identical to some man’, i.e. as having the quantificational form ‘Some x is such that x is human and Socrates is identical to x ’.

⁶See e.g. Adger (2003), esp. §3.5.3-3.5.4, for an example of the standard view, according to which only *c*-selectional (categorial selectional) features act as syntactic restrictors.

⁷The view that definite DPs occurring in postcopular position can be predicative is largely the status quo in the linguistics literature. See e.g. Partee (1986) and Mikkelsen (2005). Mikkelsen (2008) provides a helpful overview of the literature. In the philosophical literature, Fara (2001) has argued for this view as well. Fara goes even further, defending the view that definite DPs are always predicative in character, even in apparently relational sentences like ‘Oscar met the mayor of Oakland’.

- (c) He is clever, audacious, and [the greatest French soldier].
- (d) *He is clever, audacious, and [Napoleon].

As these examples show, the Coordination Test clearly yields the verdict suggests that both indefinite and definite DPs can function predicatively in copular sentences.⁸

3.3.2 Test 2: ‘What’ v. ‘Who’

A second test concerns the kinds of questions different copular sentences can be used to answer. If a copular sentence involving a subject expression that denotes a human being is predicative, it can be used to answer questions introduced by the interrogative ‘what’. By contrast, if such a sentence is not predicative, it cannot be used to answer questions introduced by ‘what’, though it may be used to answer questions introduced by ‘who’:⁹

- (3.3) (a) What is he? He is [short].
- (b) {*What/Who} is he? He is [Napoleon].

This test again yields the verdict that definite and indefinite DPs may occur in post-copular position in predicative copular sentences:

- (3.4) (a) What is he? He is [a brilliant strategist].
- (b) What is he? He is [the greatest French soldier].

As indicated, the test’s applicability is limited to cases involving expressions that denote human beings. Once expressions denoting non-human objects are involved, even non-predicative copular sentences can be used to answer ‘What’-questions:¹⁰

⁸A similar coordination test is appealed to by Higgins (1979) and Heller (2005). The difference is that whereas I here consider coordination of postcopular phrases, they consider full VP coordination, as in e.g. ‘Napoleon [is clever] and [is audacious]’. I prefer the present test because VP coordinations of this sort strike me as considerably more awkward, and thus threaten to introduce further noise.

⁹A test of this sort is employed by Geist (2007) and Williams (1983). Higgins (1979) comments on a similar phenomenon involving ‘what’: whereas paradigmatically predicative expressions can be used in pseudocleft sentences like ‘What Joey Ramone is is [refreshingly irreverent]’, nominal expressions like ‘Jeffrey Hyman’ cannot, as witnessed by the ungrammaticality of ‘What Joey Ramone is is [Jeffrey Hyman]’.

¹⁰In the taxonomy of Higgins (1979), the answer in (3.5a) would be classified as an identificational clause, and the answer in (3.5b) as a specificational clause. Specificational clauses involve a

- (3.5) (a) What is that? That is Paris.
 (b) What is the capital of France? The capital of France is Paris.

3.3.3 Test 3: 'Consider'

Our third test involves the Exceptional Case Marking verb 'consider', which can take a minimal predicative structure, called a "small clause", as its complement.¹¹ Such small clauses contain only the pre- and postcopular elements of paradigmatically predicative copular sentences, with the copula itself omitted, as in (3.6b) below:

- (3.6) (a) She considers [Joey Ramone to be refreshingly irreverent].
 (b) She considers [Joey Ramone refreshingly irreverent].

By contrast, 'be' remains obligatory when we embed a paradigmatically equative copular sentence, such as 'Hesperus is Phosphorus' or 'Joey Ramone is Jeffrey Hyman':

- (3.7) (a) She considers [Joey Ramone to be Jeffrey Hyman].
 (b) *She considers [Joey Ramone Jeffrey Hyman].

We can thus test a copular sentence for predicativity by seeing whether its pre- and postcopular elements can embed under 'consider' without the copula. The test clearly yields the verdict that copular sentences containing both indefinite and definite DPs in postcopular position can be predicative:¹²

precopular element that intuitively serves to indicate some role, with the postcopular element *specifying* who or what it is that occupies the role. Identificational clauses begin with a demonstrative and are "typically used for teaching the names of people or of things" (Higgins, 1979, p. 237). There is some disagreement about whether such clauses are species of the equative type, or whether either constitutes a distinct category of its own. See Mikkelsen (2005) for a defense of the view that specificational clauses, and certain identificational clauses, are not equative. It is generally agreed, however, that the postcopular element in such clauses at any rate does not function as a predicate.

¹¹See e.g. Rothstein (1995).

¹²This third test arguably furnishes slightly weaker evidence than our other two tests. As Lasnik (2009) observes, the verb 'consider' normally "does not combine with clauses expressing completely objective matters of fact," but rather with clauses that "involve some sort of evaluative judgment or decision on the part of anyone assessing them for truth." 'John considers Bill six feet, two inches tall' sounds marked, for example. Our judgments might therefore reflect less on the predicativity of the embedded clause than on the degree of objectivity involved in the matter under discussion. The felicitous examples above all involve a degree of subjectivity. Thus I might e.g. agree that Joey Ramone is irreverent, but not find his irreverence particularly cheerful, or again, I

- (3.8) (a) She considers [Napoleon a brilliant strategist].
 (b) She considers [Napoleon the greatest French soldier].

3.3.4 Summary

As we've seen, the view that there is a syntactic restriction which prohibits definite DPs from occurring in postcopular position in predicative sentences doesn't enjoy much plausibility. One difficulty with the view is that it would also prohibit us from treating copular sentences with indefinite DPs in postcopular position as predicative, at least if we are to maintain the standard assumption that syntactic restrictions may not concern properties of the complement beyond its phrasal category. Secondly, the view does not gain support from any of our tests for predicativity: the 'consider'-based test, the 'what'-based test, and the Coordination Test all suggest that definite (as well as indefinite) DPs can function predicatively. The simple syntactic proposal therefore can't explain our substitution failure.

Of course, the fact that definite DPs can function predicatively will also force an epicycle in the Fregean's semantic proposal, since he can now no longer maintain that, as Frege put it, "the singular definite article always indicates an object." How will the Fregean amend his proposal? To begin, notice that even if definite DPs can function predicatively in postcopular position, that doesn't force us to conclude that they do so in all their occurrences. The Fregean can, for instance, still hold that when e.g. 'the Mayor of Oakland' occurs as the direct object of a transitive verb (as in 'Oscar met the Mayor of Oakland'), or in subject position in a predicative sentence (as in 'The Mayor of Oakland ordered a raid'), it functions referentially (i.e. as an *N* type expression).

Indeed, granted that definite DPs are capable of functioning referentially, we would expect them to be capable of doing so in postcopular position as well, leading to an equative interpretation of the copular clause. This prediction is not in conflict with our predicativity tests. What those tests show is that copular sentences with definite DP complements aren't *obligatorily* equative. They however leave it open that such sentences may, for all that, have an equative reading in addition to their predicative reading. As a matter of fact, our interrogative-based test lends support to the idea. For although copular sentences with definite DPs in postcopular position

might agree that Napoleon is a French soldier, but feel that is in the end Joan of Arc who is greater. By contrast, whether Joey Ramone is Jeffery Hyman is a considerably more objective matter. The contrast in the acceptability of embedding the clause with, as opposed to without, the copula serves to mitigate this worry to some extent, but I admit that our judgments here are less robust than one would ideally like. Thanks to John MacFarlane for persistently pressing me on this point.

are, as we have observed, acceptable as answers to questions introduced by ‘what’, suggesting that they have a predicative reading, it cannot be denied that they are *also* acceptable as answers to questions introduced by ‘who’, suggesting the availability of an equative reading as well:¹³

- (3.9) (a) What is Alice? Alice is the Mayor of Oakland.
 (b) Who is Alice? Alice is the Mayor of Oakland.

The Fregean could, then, view our substitution failure as similarly ambiguous: on one reading (call this the predicative reading), it involves a transition from a true predicative sentence to a false predicative sentence, while on another (call this the equative reading), it involves a transition from a true predicative sentence to a false equative sentence.

The Fregean can then amend his proposal along the following lines. The equative reading of our substitution failure, he will continue to contend, involves construing ‘the property of being happy’ as denoting something of type e , in particular, as denoting the property of being happy. On this reading, ‘Oscar is the property of being happy’ is, again, false, because Oscar isn’t identical to the property of being happy. On the predicative reading of ‘Oscar is the property of being happy’, by contrast, ‘the property of being happy’ functions to denote an $\langle e, t \rangle$ type entity, that is, a concept, albeit a concept which, unlike the one denoted by ‘happy’, maps Oscar to the False. The Fregean’s overarching point against the property-based view at any rate remains: since properties are items of type e , they count as objects of a certain sort, and are as such not available to be denoted by predicates like ‘happy’, since predicates denote items of type $\langle e, t \rangle$.

3.4 The Fregean Predicament

The Fregean’s rejection of the view that predicative expressions like ‘happy’ denote properties, and that predicative quantifiers quantify over properties, results from two commitments. The first is that an N type occurrence of the definite DP ‘the property of being happy’ denotes the property of being happy, and more generally, that ‘denotes’ functions disquotationally when applied to N type expressions. The Fregean’s second commitment is to what I’ll call Strict Denotationalism:

¹³Geist (2007, p. 85), for example, draws this conclusion, arguing that “depending on the interpretation of the DP ... the copular sentence has a predicational or an equative reading.” The general view that definite descriptions are “type ambiguous” is quite widely accepted — again, see e.g. Partee (1986) and Mikkelsen (2005).

Strict Denotationalism: the difference in semantic type between nominal (N type) and predicative ($\langle N, S \rangle$ type) expressions corresponds to a fundamental difference in the kind of item those expressions denote: whereas nominal expressions denote objects (items of type e), predicates denote concepts (items of type $\langle e, t \rangle$).

This pair of commitments also creates a considerable problem for the Fregean, however. For surely, if the Fregean is to be credited with putting forward a viable semantic proposal, he must tell us not just that predicative expressions denote things of type $\langle e, t \rangle$. He must also tell us which *particular* $\langle e, t \rangle$ type thing it is that a given predicate denotes. For only if we are told what particular thing it is that the predicate ‘happy’, for example, denotes, can we hope to develop the Fregean proposal into a semantic theory that lets us derive specific truth conditions for sentences like ‘Oscar is happy’.

The difficulty, of course, is that it appears to be impossible, by the Fregean’s own lights, to say what it is that ‘happy’ denotes. The Fregean’s view won’t, as we’ve seen, let us say that:

(3.10) ‘Happy’ denotes the property of being happy

For given that an N type occurrence of ‘the property of being happy’ denotes the property of being happy, the $\langle N, S \rangle$ type expression ‘happy’ cannot, given Strict Denotationalism, also denote this property, but must denote something of a fundamentally different kind. The problem is quite general, however. To say what it is that ‘happy’ denotes, we have to somehow complete ‘“happy” denotes’. And to do this, we must, it seems, use some N type expression or other. But, by the disquotational assumption, that N type expression will itself denote the item that we wanted to say was denoted by ‘happy’. And, given Strict Denotationalism, this means that ‘happy’ cannot denote that item as well.

Indeed, it looks like the Fregean can’t even say that there there is *something* that e.g. ‘happy’ denotes. For presumably the kind of quantification that’s involved in the claim that “happy” denotes something is quantification into an N type position, and thus involves quantification over things of type e . But of course, there is no item of type e denoted by the $\langle N, S \rangle$ type expression ‘happy’ according to the Fregean theory.¹⁴ The theory as a whole thus appears to be incapable of being coherently

¹⁴Frege recognized this difficulty. In his June 29, 1902 letter to Russell he wrote: “You are correct in thinking that a function cannot properly be treated as something; for, as I said before, the word ‘something’ stands for a proper name. Instead of using the imprecise expression ‘ ξ is a

stated. When confronted with problems in this vicinity, Frege asked his readers not to begrudge him a grain of salt; but one is, I think, hard-pressed at this juncture not to agree with Ramsey's quip (in a different context) that "what we can't say we can't say, and we can't whistle it either."

3.4.1 Dummett's Defense

Dummett (1973) famously put forward a suggestion that promises to let the Fregean stop whistling, so to speak, and to actually *say* what a given predicate denotes. Dummett accepts that as long as the Fregean sticks to expressions like 'the property of being happy', it will appear that "it is not possible, by any means whatever, to state, for any predicate, which particular concept it stands for" (Dummett, 1973, p. 212). He thinks he can offer the Fregean a way out, however.

The Fregean's problem arises when we attempt to use an N type expression to state the denotation of a $\langle N, S \rangle$ type expression like 'happy'. To avoid his predicament, the Fregean therefore just needs to find a way to use $\langle N, S \rangle$ type expressions, rather than N type expressions, to state the denotation of $\langle N, S \rangle$ type expressions. In the case of 'happy', the most obvious candidate for accomplishing this is of course just the word 'happy' itself. Now we can't just say that 'happy' denotes happy, since that isn't even a grammatical statement. But we can circumvent this problem — or so Dummett claims — by instead using the following construction:

(3.11) Happy is what 'happy' denotes

Dummett seems to want to understand this as an equative sentence involving the equation of two predicates, exhibiting the same kind of structure that we find in "reverse" pseudoclefts like:

(3.12) Happy is what Alice used to be

If successful, Dummett's proposal would indeed appear to give the Fregean what he needs, namely a way of using an $\langle N, S \rangle$ type expression to state what an $\langle N, S \rangle$ type expression denotes.

The trouble with Dummett's proposal is that 'Happy is what "happy" denotes' doesn't actually exhibit the kind of equative structure we find in reverse pseudoclefts like 'Happy is what Alice used to be'. Free relative clauses like 'what Alice

function', we can say: '“() · 3 + 4” is a function name'. We cannot properly say of a concept name that it means something [*dass er etwas bedeute*]; but we can say that it is not meaningless [*dass er nicht bedeutungslos sei*]" (Frege, 1902).

used to be’ always contain a “gap”, syntactically represented by a trace coindexed with the *wh*-word at the front of the clause.¹⁵ The nominal free relative ‘what Oscar bought’, for instance, has the form: $\text{what}_i \text{ Oscar bought } t_i$; and the predicative free relative ‘what Alice used to be’ has the form: $\text{what}_i \text{ Alice used to be } t_i$.

Now what is noteworthy is that, when dealing with an equative clause involving a free relative, we can always substitute the expression with which the free relative is being equated into the position of the free relative’s trace, and thereby obtain a sentence that is both grammatical and semantically equivalent to the original construction. Thus, in the case of ‘Happy is what Alice used to be’, which involves the equation of two $\langle N, S \rangle$ type expressions, we can substitute ‘happy’ into the position of the trace to obtain ‘Alice used to be happy’, and in the case of ‘That ball is what Oscar bought’, which involves the equation of two *N* type expressions, we can substitute ‘that ball’ into the position of the trace to obtain ‘Oscar bought that ball’:

- (3.13) (a) ‘Happy is $\text{what}_i \text{ Alice used to be } t_i$ ’ is equivalent to ‘Alice used to be happy’.
 (b) ‘That ball is $\text{what}_i \text{ Oscar bought } t_i$ ’ is equivalent to ‘Oscar bought that ball’.

We therefore have a general pattern that we can use to test for equativity: a copular construction one element of which is a free relative, and the other element of which is not, is equative only if the kind of transformation exhibited by (3.13a) and (3.13b) produces a sentence that is both grammatical and semantically equivalent to the original copular construction. The problem is that if we perform the relevant kind of substitution on Dummett’s ‘Happy is what “happy” denotes’, we end up with ‘“happy” denotes happy’, which, as we’ve already had occasion to note, isn’t even grammatical, let alone equivalent to the original sentence.

The generalization suggested by our test is that, in order for a free relative to be predicative, the trace it contains itself needs to occupy a predicative position. This is also suggested if we look at the behavior of free relatives in predicational sentences:

- (3.14) (a) Oscar is $\text{what}_i \text{ Alice used to be } t_i$.

¹⁵The trace is usually assumed to be the result of movement of the *wh*-word out of the gap position. See Caponigro (2003) for a recent discussion of free relatives, and Heycock and Kroch (1999) for discussion of pseudoclefts involving predicative free relatives like ‘what Alice used to be’.

(b) What_{*i*} Oscar bought *t_i* is expensive.

In (3.14a) we have a free relative with a trace in predicative position functioning as the predicate, and in (3.14b) we have a free relative with a trace in nominal position functioning as the nominal subject. The reason Dummett's 'Happy is what "happy" denotes' fails our test is that the direct object position occupied by the trace in 'what_{*i*} "happy" denotes *t_i*' is nominal, just like the position occupied by the trace in 'what_{*i*} Oscar bought *t_i*', which in turn means that Dummett's free relative is itself nominal in character. Rather than exhibiting the equative form $\langle N, S \rangle$ -be- $\langle N, S \rangle$ that we find in 'Happy is what Alice used to be', Dummett's 'Happy is what "happy" denotes' seems to exhibit the form $\langle N, S \rangle$ -be-*N* that we find in something like (the ungrammatical, it seems) 'Expensive is what Oscar bought'. And just as 'Expensive is what Oscar bought', if we can understand it at all, at best tells us, of what Oscar bought, that it is expensive, so 'Happy is what "happy" denotes' at best tells us, of what 'happy' denotes, that it is itself happy. And this is of course not what Dummett wants.

In fact, Dummett comes close to recognizing this very problem, but claims that it needn't threaten his proposal. He writes:

Nor is there any difficulty in saying what in particular any given predicate stands for. We can, for example, say, 'A philosopher is what "ξ is a philosopher" stands for', or, more informatively, 'What "ξ is a philosopher" stands for is what Socrates and Plato both were'. The latter could be more briefly expressed without ambiguity as ' "ξ is a philosopher" stands for what Socrates and Plato both were'; but the former could not be converted into ' "ξ is a philosopher" stands for a philosopher', because this would naturally be understood after the model of ' "Socrates" stands for a philosopher', and prompt the inappropriate question 'Which philosopher does "ξ is a philosopher" stand for?' This may be compared with the fact that, while we may say, 'Aristotle was what Socrates and Plato both were' (namely, a philosopher), this cannot be converted into 'Socrates and Plato both were Aristotle'.¹⁶

¹⁶Dummett (1973, p. 217). Whereas we are here inquiring into the semantics of the complement of the copula in a predicative copular sentence (since this is the position predicative quantifiers quantify into), Dummett is concerned with the semantics of phrases like 'is a philosopher' or 'is happy', which include the copula. Some of his remarks (p. 214) suggest that he means to adopt Frege's view (see n. 3) that the copula is semantically vacuous, in which case this difference is of

As Dummett points out, he does not want ‘A philosopher is what “ ξ is a philosopher” stands for’ to be understood in such a way as to be equivalent to ‘“ ξ is a philosopher” stands for a philosopher’, which we obtain from the former via the kind of substitution we’ve been discussing, since the latter is naturally understood as saying that ‘ ξ is a philosopher’ stands for some philosopher or other (e.g. Socrates). This failure of equivalence, as we’ve seen, tells against the claim that the original string is indeed equative.

In his defense, Dummett argues that ‘Aristotle was what Socrates and Plato both were’ likewise fails to be equivalent to ‘Socrates and Plato both were Aristotle’. This defense fails, however. ‘Aristotle was what Socrates and Plato both were (viz. a philosopher)’ is *predicative* (i.e. of the form N-be-<N,S>), and the fact that a predicative construction fails to be equivalent to the sentence we arrive at via substitution does nothing to show that an equative construction involving a free relative may fail to be equivalent to the sentence we arrive at via substitution. Notice that an equative sentence can be obtained if we replace ‘what’ by ‘who’, as in ‘Aristotle was who Socrates and Plato both were’. But crucially, this sentence now does entail ‘Socrates and Plato both were Aristotle’. Far from showing that ‘A philosopher is what “ ξ is a philosopher” stands for’ is after all equative, Dummett’s example simply confirms that failure of equivalence is a good test for distinguishing genuine equative sentences from non-equative sentences.¹⁷

no substantive significance. The fact that Dummett aims to state the denotation of copula-including phrases like ‘is a philosopher’ using predicative phrases like ‘a philosopher’ that lack the copula has, I think, often lead readers of Dummett to fail to appreciate what I take to be the real problem with his proposal. See n. 17.

¹⁷ Though Dummett’s proposal has been found lacking by other commentators, the reason I’ve here indicated for its failure hasn’t, I believe, been sufficiently appreciated in the literature. The standard objection to Dummett has it that he fails to make a sharp enough distinction between phrases like ‘a philosopher’ — which he terms “predicative” — and copula-including phrases like ‘ ξ is a philosopher’ — which he terms “predicates”. The objection, then, is that he hasn’t succeeded in specifying the denotation of genuine predicates — rather than that of predicative phrases — because predicative phrases like ‘a philosopher’ or (allegedly) ‘what “ ξ is a philosopher” stands for’ cannot be grammatically substituted for full VP predicates like ‘ ξ is a philosopher’. (See e.g. Textor (2010), MacBride (2006), and Wright (1998) for recent versions of this objection.) This objection relies on the view that the copula has more than a merely syntactic function, however. What I take to be the deeper problem with Dummett’s proposal is that free relatives like ‘what “happy” denotes’ or ‘what “ ξ is a philosopher” stands for’ aren’t even *predicative*, and that the reason for this precisely has to do with the fact that the direct object position of ‘denotes’ (or ‘stands for’) is nominal, which is what generated the problem in the first place.

3.4.2 A Twist on Dummett's Defense

Before moving on, let me register that there is at least one way in which one might seek to re-work Dummett's strategy in the face of the difficulties I have raised. What Dummett is after is a way of using $\langle N, S \rangle$ type expressions, rather than N type expressions, to state the denotation of $\langle N, S \rangle$ type expressions like 'happy'. The difficulty he encounters is that the direct object position of 'denotes', like that of 'bought' and other transitive verbs, is of type N rather than type $\langle N, S \rangle$. Taking note of this point, the committed Fregean might then simply conclude that where natural language won't do, a technical innovation is in order. We can continue to use the ordinary 'denotes' — which requires N type expressions in its direct object position — to state the denotation of N type expressions. To state the denotation of predicative expressions, we introduce a new expression, 'denotes_{*p*}', as a piece of technical vocabulary that takes expressions of type $\langle N, S \rangle$ in its "direct object" position. The Fregean can then state the denotation of a predicative expression like 'happy' by saying that 'happy' denotes_{*p*} happy. He can now also allow that 'happy' denotes_{*p*} *something*, since this quantifier can now be read predicatively.¹⁸

Though this move marks out a position in logical space, the idea does have its drawbacks. If Higginbotham (1990) is right, no natural language verb actually functions in the manner of the proposed 'denotes_{*p*}', since natural language verbs seem to uniformly prohibit $\langle N, S \rangle$ type expressions in argument position. It therefore becomes a real question whether a semantic theory couched in such alien vocabulary is intelligible to us as speakers of mere English. I am not at all sure I know what it would mean to say that 'happy' denotes_{*p*} happy — I'm inclined to think we would still merely be whistling. Second, since the relation of denotation_{*p*} relates objects (specifically, expressions) to items of type $\langle e, t \rangle$, it is, by Fregean lights, a different relation from the relation of denotation, which relates expressions to items of type e .¹⁹ And if we are going to appeal to distinct semantic relations anyhow, then there are — as I shall suggest below — more palatable ways of doing so that don't

¹⁸See Ricketts (2010) and Heck and May (2008) for proposals in this spirit on Frege's behalf. Though see also n32 below.

¹⁹In type-theoretic terms: whereas denotation is a relation of type $\langle e, \langle e, t \rangle \rangle$, denotation_{*p*} is a relation of type $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$. This point is stressed by Wright (1998), and also noted by Parsons (1986). As MacBride (2006, n. 27) points out, some of Dummett's remarks indicate that he recognized this point as well. This suggests that Dummett may have intended his 'stands for' to be understood so as to allow $\langle N, S \rangle$ type expressions in its "direct object" position after the manner of our 'denotes_{*p*}'. However, if this was Dummett's intention, the detour through free-relatives is of course simply otiose: we needn't state the denotation of 'happy' by saying that happy is what 'happy' stands for, but could simply say that 'happy' stands for happy.

involve the introduction of grammatically alien vocabulary.

It might be objected that *pace* Higginbotham (1990), there actually *are* verbs that take $\langle N, S \rangle$ type direct objects. Indeed, one pertinent example lies close to hand. For where we have been using the term ‘denotes’, Frege himself uses the German ‘bedeuten’, and ‘bedeuten’ in its ordinary use can be translated as ‘means’ — an expression which, on the face of it, appears to accept $\langle N, S \rangle$ type direct objects. We can, for example, say that the German word ‘fröhlich’ means *happy*, and similarly, staying within English, that ‘happy’ means *happy*. Couldn’t we then just construe ‘“happy” denotes_p happy’ on the model of ““happy” means *happy*’ or ““fröhlich” bedeutet *fröhlich*’?²⁰

The suggestion is certainly intriguing. It has to be conceded, however, that ‘means’ is in various respects rather unusual. ‘Means’ doesn’t only allow adjectives like ‘happy’ in its direct object position, but also appears to allow nouns (‘Pferd’ means *horse*), transitive and intransitive verbs (‘liebt’ means *loves*, ‘raucht’ means *smokes*), and even connectives (‘und’ means *and*) and determiners (‘einige’ means *several*). If we take these examples seriously, it will therefore appear that the direct object position of ‘means’ is radically polymorphic, in a way that has no parallels among any other natural language verbs.

The more sensible reaction, I should think, is to agree with Sellars (1985) that when a word occurs after ‘means’, it is “not functioning in its normal way.” That this is indeed so is suggested by the fact — here indicated through italics — that phonological stress has to be placed on whatever expression occurs after ‘means’. Sellars concludes that the complement to ‘means’ should be understood as occurring in a certain kind of quotational context.²¹ But however exactly we explain the

²⁰Consider, in this connection, the following remark of Frege’s, on which Dummett bases his proposal:

We should really outlaw the expression ‘the *Bedeutung* of the concept word A’, because the definite article before ‘*Bedeutung*’ points to an object and belies the predicative nature of a concept. It would be better to confine ourselves to saying ‘what the concept word A stands for’ [‘*was das Begriffswort A bedeutet*’], for this at any rate is to be used predicatively: ‘Jesus is, what the concept word “man” stands for’ [‘*Jesus ist, was das Begriffswort “Mensch” bedeutet*’] in the sense of ‘Jesus is a man’ [‘*Jesus ist ein Mensch*’]. (Frege, 1997, p. 177)

If ‘bedeuten’ can take $\langle N, S \rangle$ type direct objects, Frege’s ‘*was das Begriffswort “Mensch” bedeutet*’ would not succumb to the objections I raised in the previous section, since it would have a predicative reading.

²¹Not quite an ordinary quotational context, it seems. As Sellars observes, ‘“und” means *and*’ doesn’t appear to be equivalent to ‘“und” means “and”’, since it doesn’t seem right that ‘und’

phenomenon, Sellars certainly seems right to hold that when e.g. ‘happy’ occurs after ‘means’, it is at least not functioning as a predicate. And if that’s the case, the Fregean of course can’t appeal to ‘“happy” means *happy*’ as a model for his ‘“happy” denotes_p happy’ — the whole point, after all, was to find a verb that *does* allow $\langle N, S \rangle$ type expressions in argument position. At the very least, the burden is on the Fregean to show that complements to ‘mean’ can, despite appearances to the contrary, function predicatively.

Another class of cases that might be thought to give the lie to Higginbotham’s thesis involve raising verbs like ‘seems’, as in ‘Oscar seems happy’. Here, at least, ‘happy’ appears to be functioning in its ordinary, predicative way. But this is also the problem: ‘Oscar seems happy’ can be paraphrased as ‘It seems (to me) that Oscar is happy’, suggesting that ‘happy’ is functioning as a predicate that takes ‘Oscar’ as its argument. The Fregean therefore couldn’t appeal to ‘Oscar seems happy’ as a model for his ‘“happy” denotes_p happy’, since he of course wouldn’t want ‘happy’ to be a predicate of the word ‘happy’. The Fregean therefore looks to be stuck having to introduce ‘denotes_p’ as a piece of technical vocabulary, and incurring the worries about intelligibility mentioned above.

3.5 An Alternative Solution to the Substitution Problem

Let’s review. The Fregean, as we’ve seen, proposes to explain our substitution failure in part by drawing a distinction between equative and predicative copular sentences. That distinction, he claims, has to do with a difference in the semantic type of the postcopular expression: whereas the postcopular expression in a predicative sentence is of type $\langle N, S \rangle$, the postcopular expression in an equative sentence is of type N . Due to his commitment to Strict Denotationalism, he construes that difference in terms of a fundamental difference in the kind of thing denoted by the postcopular expression, taking it that copular sentences are interpreted according to the following principles:²²

means *the word* ‘and’. Sellars therefore opts for a device he calls “dot quotation” — roughly, the proposal is that ‘“und” means *and*’ says that ‘und’ has (in German) the same function that ‘and’ has in our language. See Sellars (1985), esp. §II – V, for discussion.

²²Whether the identity relation enters the truth conditions of equative sentences because it is denoted by ‘be’, or whether it does so by other means, can be left open. It will suffice if whatever story the Fregean tells has the above principles as consequences. See Mikkelsen (2008) for a survey of different approaches to the semantics of ‘be’. I also don’t mean to suggest that there may not be structural differences between equative and predicative sentences in addition to the semantic differences here highlighted. See e.g. Bowers (1993) and Heycock and Kroch (1999) for two differ-

Equative: if $\text{Den}(\alpha)$ is of type e and $\text{Den}(\beta)$ is of type e , then $\lceil \alpha \text{ is } \beta \rceil$ is true iff $\text{Den}(\alpha)$ is identical to $\text{Den}(\beta)$

Predicative: if $\text{Den}(\alpha)$ is of type e and $\text{Den}(\beta)$ is of type $\langle e, t \rangle$, then $\lceil \alpha \text{ is } \beta \rceil$ is true iff $\text{Den}(\alpha)$ is mapped to the True by $\text{Den}(\beta)$

Given that an N type occurrence of ‘the property of being happy’ denotes the property of being happy, properties count as items of type e . They are therefore precisely *not* the kinds of things that predicative expressions like ‘happy’ denote. As we have seen, however, this conclusion puts the Fregean in a rather awkward position when it comes to saying what particular item it is that ‘happy’ *does* denote. It is time, then, to re-examine our options.

The way to get a grip on our substitution failure, while at the same time avoiding the pitfalls inherent in the Fregean’s proposal, it would seem, is to reject Strict Denotationalism, and to look for a way to separate facts about semantic type from facts about denotation.²³ This would let us join the Fregean in appealing to differences in semantic type to explain our substitution failure, while letting us avoid the Fregean’s conclusion that ‘happy’ must denote something of a fundamentally different sort from what any N type expression denotes, including N type occurrences of ‘the property of being happy’.

3.5.1 Rejecting Strict Denotationalism: Den and Typ

One rather straightforward way to implement this proposal would be to use a denotation function in coordination with a type function, rather than relying on a denotation function alone, as the Fregean does. Given the expression ‘Oscar’, for example, the type function will yield the type N as its value, and the denotation function will yield Oscar as its value. And given the expression ‘happy’, the type function will yield type $\langle N, S \rangle$ as value, leaving the denotation function free to give

ent proposals about the syntax of equative and predicative sentences. Parallel remarks apply to the alternative semantic principles we shall shortly go on to consider.

²³An alternative way to avoid the Fregean’s predicament and defend the property-based view in the face of our substitution failure would be to deny the Fregean’s disquotational assumption (rather than Strict Denotationalism), and hold that while ‘happy’ denotes the property of being happy, the definite DP ‘the property of being happy’ never denotes that property. The present paper should be understood as making a case for the claim that one can hold on to the idea that predicative quantification involves quantification over properties in the face of our substitution failure, even while retaining the relatively standard view that ‘denotes’ functions disquotationally when applied to N type expressions.

us the property of being happy as its value. The difference between the predicate ‘happy’ and N type occurrences of ‘the property of being happy’, on this view, won’t lie in a difference in what the two expressions denote, but rather in a difference in the value yielded by our type function. In place of the Fregean’s semantic principles, we then offer the following:

Equative: if $\text{Typ}(\alpha) = N$ and $\text{Typ}(\beta) = N$, then $\lceil \alpha \text{ is } \beta \rceil$ is true iff $\text{Den}(\alpha)$ is identical to $\text{Den}(\beta)$

Predicative: if $\text{Typ}(\alpha) = N$ and $\text{Typ}(\beta) = \langle N, S \rangle$, then $\lceil \alpha \text{ is } \beta \rceil$ is true iff $\text{Den}(\alpha)$ instantiates $\text{Den}(\beta)$

replacing the Fregean’s appeal to the type of thing an expression denotes with an appeal to the type of the expression itself. By separating facts about denotation from facts about semantic type in this manner, we are in a position to offer an alternative account of the substitution failure.²⁴

As our ‘what’-based test showed, there is evidence that copular sentences with definite DPs in postcopular position generally have an equative reading (though not in place of, but simply in addition to, their predicative reading). Since the difference between the Fregean proposal and our alternative account comes into its own precisely when our substitution problem is construed equatively, let us consider the problem under this guise first.

Given the Fregean’s account of the difference between equative and predicative copular sentences, he has to say that if ‘Oscar is the property of being happy’ is construed equatively, the postcopular occurrence ‘the property of being happy’ denotes something of a fundamentally different kind from what the postcopular expression in the predicative ‘Oscar is happy’ denotes. Having rejected Strict Denotationalism, we needn’t follow him in this respect, but can explain the substitution failure while holding on to the view that both ‘happy’ and N type occurrences of ‘the property of being happy’ denote the property of being happy. ‘Oscar is happy’, we will say, is subject to a predicative interpretation because ‘happy’ is of type $\langle N, S \rangle$. The sentence is therefore true just in case $\text{Den}(\text{‘Oscar’})$ instantiates $\text{Den}(\text{‘happy’})$, that is,

²⁴The fact that definite descriptions can be interpreted as having either type N or type $\langle N, S \rangle$ raises a question about how to understand these semantic principles. There would seem to be two options. First, we could take it that the principles apply to expression tokens rather than types: certain tokens of ‘the Mayor of Oakland’ are interpreted as having type N , others as having type $\langle N, S \rangle$. Second, we could take a more standard line and view the principles as applying to expression types. We’d then have to say that predicative uses of ‘the Mayor of Oakland’ involve tokens of a different expression type from non-predicative uses of that description. I discuss the matter in §3.5.3 below.

just in case Oscar has the property of being happy. ‘Oscar is the property of being happy’ (read equatively), by contrast, involves an N type expression in postcopular position, and is true just in case $\text{Den}(\text{‘Oscar’})$ is identical to $\text{Den}(\text{‘the property of being happy’})$, that is just in case Oscar is identical to the property of being happy. On this view, the truth-conditional difference between ‘Oscar is happy’ and ‘Oscar is the property of being happy’ (read equatively) therefore isn’t due to a difference in the items denoted by ‘happy’ and (N type occurrences of) ‘the property of being happy’, but simply due to a difference in the semantic types of these expressions.

The account will also let us handle the substitution failure on a predicative reading. Whereas an N type occurrence of ‘the property of being happy’ can, as we just saw, be assigned the same denotation as ‘happy’, an $\langle N, S \rangle$ type occurrence of ‘the property of being happy’ clearly cannot, since that now *would* make ‘Oscar is happy’ and ‘Oscar is the property of being happy’ (read predicatively) truth-conditionally equivalent. What, then, *is* the denotation of an $\langle N, S \rangle$ type occurrence of ‘the property of being happy’? Given that equative and predicative readings of ‘Oscar is the property of being happy’ do not seem to differ in their truth conditions, we may take it that an $\langle N, S \rangle$ type occurrence of ‘the property of being happy’ denotes the property Oscar instantiates just in case he is identical to the property of being happy. We, in other words, assign the property of being identical to the property of being happy (i.e. $\lambda x.[x = \lambda y.[y \text{ is happy}]]$), rather than the property of being happy (i.e. $\lambda y.[y \text{ is happy}]$), as the denotation of $\langle N, S \rangle$ type occurrences of ‘the property of being happy’. ‘Oscar is the property of being happy’ (read predicatively) will thus come out false, since Oscar does not instantiate the property of being identical to the property of being happy.

Indeed, this relationship between the denotation of an $\langle N, S \rangle$ type occurrence of a definite DP and the denotation of an N type occurrence of that same DP will hold quite generally: an $\langle N, S \rangle$ type occurrence can be understood as denoting the property of being identical to the item that an N type occurrence of that DP denotes. In the case of ‘the Mayor of Oakland’, for example, an N type occurrence of this description will denote the Mayor of Oakland, while an $\langle N, S \rangle$ type occurrence of it will denote the property of being identical to the Mayor of Oakland.²⁵

²⁵Compare the *ident* function proposed by Partee (1986), which maps e type denotations to corresponding $\langle e, t \rangle$ type denotations in an analogous manner. Using ‘ t ’ as a definite description operator in the metalanguage, Partee’s proposal amounts to the thought that whereas an N type occurrence of ‘the Mayor of Oakland’ denotes $\iota x[\text{MoO}(x)]$, an $\langle N, S \rangle$ type occurrence of that expression denotes $\lambda x[x = \iota x[\text{MoO}(x)]]$. An alternative would be to take an $\langle N, S \rangle$ type occurrence of ‘the Mayor of Oakland’ to denote $\lambda x[\text{MoO}(x) \wedge \forall y(\text{MoO}(y) \rightarrow y = x)]$ (compare e.g. Fara (2001)), or even simply $\lambda x[\text{MoO}(x)]$, with uniqueness as a presupposition of N and $\langle N, S \rangle$ type definite descriptions alike.

Finally, our account of course also puts us in a position to vindicate the view that predicative quantification involves quantification over properties. The following two sentences

- (3.15) (a) Alice is something Oscar is not.
 (b) Alice has some property Oscar lacks

do not involve quantification over different kinds of things — concepts and objects, respectively — as the Fregean would have it. Both involve quantification over properties. Where they differ is just in the type of variables the quantifiers bind: whereas predicative quantifiers bind $\langle N, S \rangle$ type variables, nominal quantifiers bind N type variables. That's not to say that there isn't *something* to the idea that there is a difference in the kind of thing predicative as opposed to nominal quantifiers quantify over more generally. The different semantic types involved in the two cases do place different demands on the composition of the domain. The domain of predicative quantification includes only the kinds of entities that are fit to be denoted by $\langle N, S \rangle$ type expressions, that is, properties. The domain of nominal quantification, by contrast, may include anything there is (*including* properties), since anything there is, is fit to be denoted by N type expressions.²⁶

3.5.2 Rejecting Strict Denotationalism: Ref and Asc

In contrast to the Fregean, who proposed to explicate the difference between predicative and nominal expressions in terms of a difference in what such expressions denote, we have delineated that difference in terms of an independent notion of the semantic type of an expression. There is, however, at least one other way to avoid the problems associated with Strict Denotationalism that we ought to consider.

By way of a bit of motivation, consider that when using a predicative expression, one doesn't seem to mention, or refer to, or say something about a property. We here of course have to take care to distinguish what a *speaker* refers to when using an expression from what the *expression* is semantically related to. Even with this

I discuss these alternatives in more detail, and opt for the third, in Rieppel (2012). For present purposes, the differences between them needn't concern us, since we can equally well explain the substitution failure on any of these views; I will, for the sake of simplicity, work with the proposal laid out in the body of the text.

²⁶The claim that the domain of nominal quantification may contain *anything* there is, isn't meant to amount to the claim that "it" may "contain" *everything* there is, all at once, so to speak. Whether completely unrestricted quantification is possible is a question I won't take up here.

caveat on board, however, we might still take it as at best odd to say that predicates refer to properties, or to anything at all, for that matter. Only N type expressions, we might be inclined to say, *refer* to things. Predicative expressions, we might continue, rather “express” or “predicate” or “ascribe” things (specifically, properties).²⁷

Let’s pursue this thought. It suggests that we could construe the distinction between N and $\langle N, S \rangle$ type expressions in terms of a difference in the semantic relation such expressions bear to their semantic values: whereas N type expressions *refer to* their semantic values, $\langle N, S \rangle$ type expressions *ascribe* them. Indeed, we could drop talk of semantic type altogether. Rather than say that an expression is of type N or $\langle N, S \rangle$, we could just say that it is referential or ascriptive. We can, if we like, still retain an informal, umbrella notion of denotation: to say that a given expression *denotes* some item (or has that item as a semantic value) would now just amount to saying that it either refers to that item, or ascribes that item. Ascription and reference are, if one likes, two different *ways* in which an expression can denote something, or have something as a semantic value. The crucial point is just that the two semantically relevant features that were, on the first implementation we considered, encoded by the type of the expression and its denotation, are here instead encoded by facts about which semantic relation a given expression is in the domain of, and facts about what item it bears that relation to.

²⁷Moving forward, I will use the terminology of ascription, albeit with some hesitation: ascription is naturally understood as a three-place relation (x ascribes y to z), whereas I mean it to be a two-place relation. I trust the reader won’t be misled. The general idea that different kinds of expressions may bear different semantic relations to their semantic values, and that this may be relevant to various kinds of substitution failures, has been mentioned (though not always endorsed) by a number of authors, including Rosefeldt (2008), Burge (2007), MacBride (2006), Künne (2003), Wright (1998), Etchemendy (1999), Strawson (1987), Dudman (1972a), and Searle (1969). The terminology of ascription is also employed by Searle (1969) and Wright (1998). Although I endorse their conclusion, the argument I offer in its support differs in important respects from the one presented by Searle and Wright. First, they both make the assumption that genuine predicates include the copula, and consequently inquire into substitution failures involving pairs of sentences like ‘Oscar is happy’ and (the apparently ungrammatical, or list-like) ‘Oscar the property of being happy’. Second, they both assume that such substitution failures do indeed demand a semantic, rather than a syntactic, explanation. Substitution failures of the sort we’ve been looking at, involving predicates sans-copula, arguably give us better grounds for reaching semantic conclusions, however, since a purely syntactic explanation is, as we’ve seen, ruled out. Furthermore, the type-ambiguity of definite descriptions, which we encountered in the course of investigating the syntactic proposal, imposes further demands on an acceptable explanation of our substitution failure, and may also (as I argue below) provide reasons for preferring an approach that appeals to distinct semantic relations over other alternatives to the Fregean view (such as the proposal discussed above, involving a type-function).

The contrast between predicative and equative sentences, we will now say, involves a difference in the semantic relation used to interpret the postcopular expression: whereas equative readings involve a referential interpretation of the postcopular expression, predicative readings involve an ascriptive interpretation of the postcopular expression. The semantic principles governing copular sentences would, in other words, now look as follows:

Equative: if $\exists x[\text{Ref}(\alpha) = x]$ and $\exists x[\text{Ref}(\beta) = x]$, then $\lceil \alpha \text{ is } \beta \rceil$ is true iff $\text{Ref}(\alpha)$ is identical to $\text{Ref}(\beta)$

Predicative: if $\exists x[\text{Ref}(\alpha) = x]$ and $\exists x[\text{Asc}(\beta) = x]$, then $\lceil \alpha \text{ is } \beta \rceil$ is true iff $\text{Ref}(\alpha)$ instantiates $\text{Asc}(\beta)$

We can then once again explain our substitution failure while holding on to the view that ‘happy’ and referential occurrences of ‘the property of being happy’ are both semantically related to the property of being happy. In ‘Oscar is happy’, the postcopular expression functions to *ascribe* the property of being happy, and the sentence is (let’s assume) true because Oscar has that property. On the other hand, in ‘Oscar is the property of being happy’ (read equatively) the postcopular expression functions to *refer to* the property of being happy, and the sentence is false, because Oscar isn’t identical to that property. Finally, on a predicative reading of ‘Oscar is the property of being happy’, the postcopular expression functions to ascribe something — but what it ascribes is the property of being identical to the property of being happy, and so the sentence is once again false, because Oscar doesn’t have *that* property.

When it comes to the difference between nominal and predicative quantification, we again substitute talk of semantic type with talk of semantic relations. The predicatively quantified ‘Alice is something Oscar is not’ and the nominally quantified ‘Alice has some property Oscar lacks’, we now say, differ not in terms of what they quantify over, but in terms of the semantic relations that the bound variables bear to their values: whereas predicative quantifiers bind variables that ascribe their values, nominal quantifiers bind variables that refer to their values. Predicative quantifiers can thus again be understood as quantifying over properties, albeit in a way that is peculiar to them, and importantly different from the way in which nominal quantifiers quantify over properties.

3.5.3 A Consideration in Favor of Ref and Asc

As we've seen, there are at least two ways to separate facts about semantic type from facts about denotation, and thereby offer an explanation of our substitution failure that both avoids the difficulties associated with Strict Denotationalism, and lets us hold on to a property-based account of predicates and predicative quantifiers. Let me now put forward a consideration which, I believe, favors the second implementation of our proposal over the first.

In view of the apparent type-ambiguity of definite descriptions, I often resorted to talk about the semantic type and denotation of a given *occurrence* of an expression in the course of presenting the first implementation of our proposal. For example, whereas the occurrence of the 'the mayor of Oakland' in 'the Mayor of Oakland ordered a raid' is of type N and denotes the Mayor of Oakland, its occurrence in 'Alice is the Mayor of Oakland' (read predicatively) is of type $\langle N, S \rangle$ and denotes the property of being identical to the Mayor of Oakland. The issue is particularly acute if we grant, as we have been, that copular sentences with definite DP complements are capable of being interpreted both equatively and predicatively, for then 'Alice is the Mayor of Oakland' will involve a complement having a different type and a different denotation depending on how the sentence is interpreted.

How should we understand this talk of the different types and denotations had by different occurrences of a definite description on the first implementation? One option would be to hold that N and $\langle N, S \rangle$ type occurrences of 'the Mayor of Oakland' are tokens of different expression types: N type occurrences of the description are tokens of one expression type, which denotes the Mayor of Oakland, and $\langle N, S \rangle$ type occurrences are tokens of another expression type, which denotes the property of being identical to the Mayor of Oakland. That we should have to countenance distinct expression types where we intuitively have just one, to correspond to the two readings of definite descriptions, might strike us as problematic, however. It would certainly be nice if we could avoid doing so.

We might therefore try a different line. We could say that a description like 'the Mayor of Oakland', *qua* expression type, receives multiple semantic types and multiple denotations. It would then be up to us to select a particular semantic type and denotation from among those available when interpreting a token of that expression in a particular context of use. There is, however, a difficulty here too. Since denotation and semantic type are, on the first implementation, construed as two independent semantic features of an expression, there is no explanation of what prevents us from interpreting a given token of a definite description as having type N but denoting the item that, as we'd want to say, goes with the $\langle N, S \rangle$ type inter-

pretation of the description. The proposal, that is to say, permits too much freedom of movement, with no restrictions to prohibit us from, for example, interpreting a given token of ‘the Mayor of Oakland’ as having type N , but denoting the property of being identical to the Mayor of Oakland. Matters of semantic type and denotation are, one in other words worries, just not connected closely enough on this view of the matter. To avoid this kind of type/denotation mismatch, we’d have to go back to postulating distinct expression types, each of which receives a unique denotation and semantic type.

Our second implementation involving reference and ascription does better when it comes to the type ambiguity of definite descriptions. Since this implementation puts different semantic relations at our disposal, we can allow that there is just one expression type, and simply say that descriptions (qua expression types) are in the domain of more than one semantic relation. The description ‘the Mayor of Oakland’, for example, is in the domain of both the reference relation (which relates it to the Mayor of Oakland) and the ascription relation (which relates it to the property of being identical to the Mayor of Oakland). A given token of that expression in a context of use can then be interpreted either referentially or ascriptively. Since our two semantic relations simultaneously encode both semantic-type-like information and denotation-like information, the possibility of a mismatch between denotation and semantic type doesn’t arise: if a description is interpreted referentially, it is the item referred to that functions as its semantic value, whereas if it is interpreted ascriptively, it is the item ascribed that functions as its semantic value. The second implementation thus establishes a tighter connection between semantic type and semantic value than does the first implementation.²⁸

It is instructive in this regard to compare our two proposals to the Fregean view. The Fregean attempts to use Strict Denotationalism to establish an especially tight connection between the denotation of an expression and its semantic type, by, so to speak, just letting us “read off” the semantic type from what the expression is interpreted as denoting: if an expression is interpreted as denoting a concept, it has type $\langle N, S \rangle$, and if it is interpreted as denoting an object, it has type N . The first implementation rejects Strict Denotationalism, and separates semantic type from denotation, but also threatens to go too far in this regard, severing the connection between these two semantic features. Our second implementation, by contrast, achieves the separation in a less radical way: we can’t, as on the Fregean view, read the semantic type of an expression off the item it is interpreted as denoting, but

²⁸See Rieppel (2012) for further discussion about the type ambiguity of definite descriptions, and the potential advantages an appeal to distinct semantic relations may offer us here.

we can read off its semantic type from the semantic relation used to interpret the expression. The second implementation can, in this sense, be seen as a compromise between the Fregean view and the first implementation, retaining attractive features of each.

3.5.4 Wright and MacBride on Ascription

As already noted, the idea that different kinds of expressions may bear different semantic relations to their semantic values has been suggested by other authors in the past. Views along these lines have also incurred criticism, however, so let us look at some of those objections here. One worry is that, as MacBride (2006) puts it, “ascription *is* reference in all but name.” The notion of reference, it is charged, is one on which we have a firm handle, but ascription, construed as a semantic relation that is genuinely *distinct* from reference, is deeply obscure by comparison. Wright (1998), who also appeals to a notion of ascription (see n. 27), responds to this kind of worry by claiming that ascription “is, pre-theoretically, every bit as clear as the ordinary notion of reference,” and that it can be explained in the following way:

For a predicate to stand in the relation of ascription to a property or concept is just this: for its sense so to relate it to that property/concept that it may be used in concatenation with an appropriate singular term to say of the bearer of that term that it has the property, or falls under the concept in question.

MacBride (2006) rejoins that on this view of the matter, ascription is revealed to be a composite relation, “roughly speaking, a composite of the reference relation between predicates and properties, and the functional relation between predicates and singular terms that enables predicates to be used to describe the objects picked out by singular terms.” Since ascription is “composite,” involving reference as one “component,” it isn’t a *sui generis* relation on par with reference.

I want to say three things about matters in this vicinity. First, regarding the alleged obscurity of ascription construed as a semantic relation genuinely distinct from reference, one would like to be told more about the notion of reference against which ascription fails to hold up. One thought would be that we have an intuitive handle on a disquotational notion of reference, the sort of thing involved in the apparent truism that e.g. ‘Oscar’ refers to Oscar. This doesn’t seem to be the notion the objection relies on, however. For if we are going to accept that there is a semantic relation between predicative expressions and properties at all — something

the objector seems willing to grant: he just thinks this relation *is* reference — then that relation won't be disquotational in character. The charge, then, seems to be that while we have a firm grip on a semantic relation — I've been calling it "denotation" and the objector calls it "reference" — which applies to both nominal and predicative expressions, we have no equally firm grip on a more restricted semantic relation which applies to predicative expressions alone. I'm not sure this is right. But more importantly, I find the insistence that we ought to have a firm pre-theoretic understanding of the relevant notion somewhat misplaced. I would suggest that we are apt to gain our best understanding of ascription, as well as of reference (in my restricted sense), by attending to the roles these notions play in our overall semantic theory. I have suggested such roles: one concerns their involvement in the interpretation of predicative and equative sentences; another, related role concerns the way they can be brought to bear on the issue of predicative and non-predicative interpretations of definite descriptions; and a third concerns their involvement in the distinction between nominal and predicative quantification. Further investigation may show that there is yet further work for them to do.

Second, MacBride's charge that ascription is ultimately a composite relation, to be partially understood in terms of "reference" (or "denotation"), can in the present context perhaps best be understood as the claim that ascription — as well as the restricted notion of reference I've appealed to, I presume — should be "factored" into two separate components, represented by Den and Typ, as on the first implementation of our proposal. This, however, just looks like an insistence that the first implementation of our proposal is to be preferred over the second. A friend of ascription will turn the tables, and claim that the general notion of denotation is to be understood disjunctively, in terms of the more restricted notions of reference and ascription. It seems to me that if we want to demonstrate the superiority of one of these two approaches over the other, then we would do best to look towards considerations of overall theoretical fruitfulness. In the previous section, I put forward one consideration, having to do with the type-ambiguity of definite descriptions, that may tell in favor of the second implementation over the first. It is, at any rate, on the basis of considerations of this general kind that, I think, this matter ought to be adjudicated.

Finally, we should note that the demands which we place on ascription will depend on our explanatory ambitions. It has, for instance, often been claimed that a theory of predication needs to solve problems having to do with the "unity of the sentence." Roughly, the demand is that we explain why a sentence isn't a mere list, or a mere syntactic configuration of expressions each of which individually pick

out certain items.²⁹ One way to understand this is as the demand that we offer a systematic semantics which tells us the conditions under which sentences are true, and thereby shows sentences to be the kinds of things capable of having truth values. If this is how we understand the demand, then it is one that, I believe, our proposal involving ascription can be claimed to meet. It could, however, be maintained that there is a deeper problem in the vicinity, one that the provision of a semantic theory doesn't, or doesn't on its own, resolve. Someone who takes it that ascription is being put forward as a solution to this deeper problem might well not regard the characterization of ascription I've here offered as sufficiently explanatory. I find this deeper problem rather elusive. But my explanatory ambitions have, in any case, been more modest. The question I've aimed to address, and to which the proposal involving ascription has been put forward as an answer, is just the question of how to provide a semantics for predicates and predicative quantifiers that overcomes the difficulty posed by the substitution failure with which we began.

3.6 A Look Back at Ockhamism

To conclude, let us take a step back to consider how the Ockhamist fits into the theoretical landscape I've laid out. The naïve version of the property-based view with which we began attempted to construe the semantic difference between nominal and predicative expressions solely in terms of a difference in the kinds of things such expressions denote — objects and properties, respectively. As we've seen, that view fails. It is embarrassed by the fact that certain nominal expressions denote properties as well, and is then unable to make sense of the substitution failures that occur when we substitute such nominal expressions for predicates. The Ockhamist suggests that the problem lies in taking it that predicates have the function of denoting things at all. The Fregean, by contrast, aims to retain a denotationalist picture, and claims that we need to draw a more fundamental distinction between the things nominal and predicative expressions denote.

On the face of it, the Ockhamist and the Fregean seem to be pulling in opposite directions. Seen in a certain light, however, there is also something of a kinship between the two. The Ockhamist, as we've seen, treats predicates as applying to individual objects, but rejects as misconceived the question of what a predicate de-

²⁹Wright (1998), for example, appeals to ascription to explain substitution failures involving pairs of sentences like 'Shergar is a horse' and the apparently list-like 'Shergar the concept horse'. He may therefore have intended his appeal to ascription to bear more directly on the "unity of the sentence" than I have.

notes, or has as its semantic value. The Fregean also wants to deny that a predicate denotes an entity of any sort, but then looks towards concepts to fill the relevant role. Interestingly, Frege himself in at least one instance motivates his position on the denotation of predicates by registering a dissatisfaction with the kind of view we encountered while looking at the historical antecedents of the Ockhamist Account:

The word ‘common name’ leads to the mistaken assumption that a common name is related to objects in essentially the same way as is a proper name, the difference being only that the latter names just one thing whilst the former is usually applicable to more than one thing. But this is false, and that is why I prefer ‘concept word’ to ‘common name’. ... A concept word must have ... if it is to have a use in science, a *Bedeutung*; but this consists neither of one object nor of a plurality of objects: it is a concept. ... Logic must demand not only of proper names but of concept words as well that the step from the word to the sense and from the sense to the *Bedeutung* be determinate beyond any doubt. Otherwise we should not be entitled to speak of a *Bedeutung* at all.³⁰

As we’ve seen, however, there is a serious doubt that the Fregean in the end *is* entitled to speak of the *Bedeutung* of a predicate.³¹ It looked like the only way the Fregean could put his point would be by introducing the novel two-place predicate ‘denotes_p’, and then saying that e.g. ‘happy’ denotes_p happy. That move, however, left lingering doubts about the intelligibility of the view. This suggests that the Fregean’s position might be better understood as nothing but a (perhaps unfortunately phrased) version of the Ockhamist view. We might take the claim the ‘happy’ denotes_p happy as simply shorthand for the claim that for any object *a*, ‘happy’ applies to *a* just in case *a* is happy.³² (We would, in other words, read the

³⁰Frege (1997, p. 180).

³¹Recall here again Frege’s remark to Russell that “we cannot properly say of a concept name that it means something [*dass er etwas bedeute*]” (Frege, 1902).

³²Heck and May (2008) suggest that something along these lines is, ultimately, the right way to understand Frege’s talk of predicates denoting concepts. One slight difference is that they attribute to Frege what I in the last chapter called a syncategorematic view. As I understand them, they take the syncategorematic nature of the proposal to be significant, because it (they suggest) encapsulates what Frege meant by saying that concepts are unsaturated, or essentially predicative. They however also claim that this doesn’t mean that Frege “envisaged denying that predicates denote at all” in the manner of Davidson. I find that somewhat puzzling — if Frege’s talk of predicates’ denoting concepts is in the end to be cashed out in syncategorematic terms, then it is hard to see what exactly distinguishes his view from nominalism.

predicate ‘- - - denotes_p . . . ’ as a shorthand for the sentential function ‘for any a , - - - applies to a iff a is . . . ’.) The Fregean’s claim that predicates do not denote entities of any sort would then collapse into the nominalist view the Ockhamist proposes, according to which predicates do not function to denote things at all.

Be that as it may. My point is that the Fregean and the Ockhamist position resemble one another in that both reject the thought that predicates denote entities of any kind. The refinement of the property-based account that I’ve proposed in this chapter gives us a different way of looking at the matter. It suggests that the problem with the naïve view lies not with the properties predicates are said to denote, but with the denoting, so to speak. Denotation is just too coarse grained a notion. We looked at two ways in which to impose further grain. On the first implementation, an expression is associated not just with a denotation, but also with a specification of its semantic type. I then argued that a second implementation, on which the relation of denotation is factored into the two more restricted relations of reference and ascription, enjoys some advantages over the first. What we have at any rate seen is that our substitution failure does not force us to join the nominalist in abandoning the view that predicates have properties as their semantic values. The nominalist is right to want to sharply distinguish the function of nominal and predicative expressions. But rather than deny a semantic role to properties, we can instead understand that distinction in terms of semantically relevant features beyond the item an expression stands for. As I’ll try to show in the next two chapters, the extended space of theoretical possibilities we’ve here developed also serves to shed a fresh light on a number of other semantic and metaphysical questions.

4 Substitution Again: Tropes and Propositions

4.1 More Property-Denoting Expressions?

In the last chapter, we saw that we can continue to maintain the view that predicates denote properties despite the fact that explicitly property-denoting expressions like ‘the property of being happy’ cannot be substituted the corresponding predicates *salva veritate*.¹ We now turn our attention towards a further class of nominal expressions that, in view of their close connection to predicates, might be thought to denote properties. From the adjective ‘happy’, for example, we can construct not just the property description ‘the property of being happy’, but also the *adjective nominalization* ‘happiness’.²

Such an adjective nominalization, on tends to think, denotes the same thing as does the property description derived from the same predicate. It, for example, seems fine to say that happiness is a property, and granted that happiness is a property, we naturally suppose that it can be identified with the property of being happy. We get further support for this view from the fact that property descriptions can often be substituted for the corresponding adjective nominalizations. We can, for instance, substitute ‘the property of being courageous’ for ‘courage’ in the following without any evident change in truth conditions:

¹For ease of exposition, I’ll often speak simply in terms of denotation, while of course bearing in mind that such talk ultimately has to be refined along one of the two lines discussed in the last chapter.

²A similar relationship holds between predicative NPs like ‘adult’ and corresponding nominal expressions like ‘adulthood’. I’ll here focus mostly on adjective nominalizations, however. Interestingly, there are cases where the morphological relationship appears to be reversed. The predicative ‘courageous’ appears to be derivative from the nominalization ‘courage’, for example. Thanks to Line Mikkelsen for pointing this out to me.

- (4.1) (a) [Courage] is a virtue.
 (b) [The property of being courageous] is a virtue.

So it looks like we indeed have three classes of expressions that can be construed as denoting properties: not just predicates and property descriptions, which we've already examined, but also the corresponding adjective nominalizations.

In this chapter, I want to look at an argument due to Moltmann (2003a; 2004) which threatens to pull the rug out from under this pat story.³ In fact, Moltmann doesn't just question the claim that adjective nominalization denote properties, but appeals to data involving such expressions to challenge the property-based approach to predicative quantification that I defended in the previous chapter as well. Her argument involves two steps. She first points out that contexts like the above, which allow the free substitution of property descriptions and adjective nominalizations, are the exception rather than the rule. This, she argues, shows that adjective nominalizations denote items of a different kind from the items denoted by predicates and property descriptions. Second, she argues that certain kinds of quantifier restrictions show that predicative quantifiers should be regarded as quantifying over items of this alternative sort, rather than over properties.

I will begin, in the next section, by reviewing Moltmann's argument. Having done that, I'll then defend the property-based account of predicative quantification against Moltmann's objection. That is my primary aim in this chapter. I then turn to the broader question of whether the substitution failures Moltmann appeals to in the first part of the argument establish that adjective nominalizations do indeed fail to denote properties. As we saw in the last chapter, substitution failures needn't invariably be thought to demonstrate a difference in semantic value. A subsidiary aim of the chapter, therefore, will be to consider whether the kinds of maneuvers I proposed in the last chapter can be brought to bear on other substitution failures, including not just those involved in Moltmann's argument, but also closely related substitution failures involving proposition-denoting expressions.

4.2 Moltmann's Argument

Examples of contexts which don't allow the substitution of property descriptions for adjective nominalizations include contexts involving (to use Moltmann's (2004)

³The arguments I here want to consider are spread over the two papers indicated, and I will draw on material from both papers. I hope that I have avoided any significant distortions of Moltmann's views in my reconstruction of her arguments.

terminology) evaluative predicates (like (a) below), episodic predicates (like (b) below), intensional predicates (like (c) below), and instance-distribution predicates (like (d) below):

- (4.2) (a) {Ordinariness/the property of being ordinary} is boring.
 (b) I often encountered {hostility/the property of being hostile}.
 (c) Mary admires {wisdom/the property of being wise}.
 (d) {Honesty/the property of being honest} is rare.

The problem is not — with the possible exception of (d) — that the substitutions fail to preserve grammaticality, but rather that the truth conditions of the sentences seem to shift as a result of the substitutions. One may, for example, well have encountered hostility, but one doesn't, it seems, generally encounter the property of being hostile any more than one encounters other abstract objects, such as the number two. Similarly, it is hard to see why Mary would admire the property of being wise any more than she would admire other abstract objects, but Mary is in good company when it comes to her admiration of wisdom.

Moltmann notes that this kind of change in truth conditions appears to involve a shift in the manner in which the relevant predicate applies. Consider 'boring', for instance. In the sentence 'the property of being ordinary is boring', 'boring' functions the same as it does in a sentence like 'Oscar is boring'. In these cases, the truth of the sentence simply requires that the predicate apply to the the entity denoted by the expression in subject position. Or, as we might also put it: it simply requires the property denoted by 'ordinary' be instantiated by the item that the subject expression denotes. But now consider the sentence 'Ordinariness is boring'. Moltmann offers the following gloss on the truth conditions of this sentence: normally, for any entity x , if x is ordinary, then *the ordinariness of x* is boring (Moltmann, 2004, p. 8). Things like the ordinariness of x , or x 's ordinariness, are *tropes*, that is, concrete property manifestations — in this case, a concrete manifestation of the property of being ordinary. This sentence therefore doesn't require that the predicate 'boring' apply to the property of being ordinary itself, but rather that it (normally or generally) apply to concrete manifestations of that property.⁴

⁴Could we do without tropes? Perhaps 'ordinariness is boring' merely requires that given an ordinary x , it is generally the case that x is boring. We could then make do with the ordinary things themselves, instead of appealing to the ordinariness of those things. Moltmann objects that while it is true that ordinariness is boring, "many ordinary people, objects, or events may not be boring in some respect or another (for example not boring to manipulate, to play with, or to disrupt)" (2004, p.

The hypothesis that ‘ordinariness’ denotes the same thing as ‘the property of being ordinary’, however, offers us no explanation of why the truth conditions of the second sentence differ from those of the first in this way. To explain the shift in the manner of application of ‘boring’, Moltmann argues, we must postulate a different denotation for ‘ordinariness’. Indeed, the entity denoted by ‘ordinariness’, she argues, needs to be construed as having a fundamentally different nature from things like Oscar and the property of being ordinary. It has to be what she calls a *kind of trope*. A kind of trope is like a property insofar as it “collects together” some number of tropes. Ordinariness, for example, will have the various concrete manifestations of the property of being ordinary as its “instances”. But it must crucially differ from a property in being unable to itself be a bearer of properties. Kinds of tropes, we might say, “repel” attempts at predicating properties of them, resulting in the property’s instead being predicated — in a generic fashion, in the case of ‘boring’ — of the tropes that are the kind’s instances. Since kinds of tropes are in this way “by nature [unable] to bear ordinary properties as expressed by predicates”, we have an explanation of why an adjective nominalization, unlike a property description, “triggers special applications of a predicate, to the effect that the predicate is predicated only of the instances of the kind [denoted by the adjective nominalization]” (Moltmann, 2004, p. 18, 23).

Of course, this conclusion raises the question of how we ought to explain predicates which *do* seem to allow the substitution of property descriptions for adjective nominalizations. ‘Honesty is a property’ and ‘The property of being honest is a property’, for example, seem to be truth-conditionally equivalent. Here, the property denoted by the predicative expression ‘property’ isn’t being predicated of the tropes that are the instances of the kind denoted by ‘honesty’, since those tropes precisely aren’t properties. To resolve this issue, Moltmann argues, we ought to countenance not just kinds but also *reified kinds*, which are to be understood as “universals which share the same instances as the corresponding non-reified kinds, but which now are able to bear properties” (Moltmann, 2004, p. 27). These reified

9). It may be possible to finesse this issue, however, by appeal to the nature of the generic quantifier involved. After all, just as it seems acceptable to say that dogs bark while still acknowledging that many dogs do not bark, so we may be able to maintain that ordinary people are, generally, boring, while acknowledging that many ordinary people are, for all that, not boring. Alternatively we might, as Moltmann points out in a footnote, appeal to some kind of *ceteris paribus* clause. Whichever route we prefer, though, the crucial question of how to explain the difference in the manner of application of ‘boring’ remains. That is, we would still have to explain why ‘boring’ is applied to the ordinary individuals themselves, rather than to the property of being ordinary. I will here follow Moltmann in taking it that the truth conditions of such sentences are best given by appeal to tropes.

kinds are of course just properties — the reification of honesty, for example, is just the property of being honest. Given this notion of reification, we can now explain why the predicate ‘property’ allows substitution of kind denoting terms for property denoting terms. The thought, as I understand it, is that when combined with a property denoting term, ‘property’ denotes $\lambda x.[x \text{ is a property}]$ (the property of being a property); when combined with a kind denoting term, on the other hand, it denotes $\lambda x.[\text{the reification of } x \text{ is a property}]$ (the property of being a kind of trope whose reification is a property).⁵ Substitution of a kind denoting term for a property denoting term thus induces a shift in the meaning of the predicate ‘property’, but the shift is of such a sort as to ensure that substitution of ‘honesty’ for ‘the property of being honest’ in ‘the property of being honest is a property’ produces a sentence that is truth-conditionally equivalent.⁶

The second part of Moltmann’s argument now has it that predicative quantifiers (she calls them “propredicative nominalizing quantifiers”) should be construed as quantifying over kinds of tropes rather than properties. For consider predicatively quantified sentences like:

- (4.3) (a) John is something boring.
 (b) John is something Mary admires.

The phrases ‘boring’ and ‘Mary admires’ seem to function to restrict what the quantifiers in these sentences quantify over, which suggests that examination of these restrictions might help us “identify the kinds of objects those quantifiers range over” (Moltmann, 2003a, p. 454). Of course, what we see is that the sort of thing Mary would normally be thought to admire is wisdom or generosity, not the property of being wise or the property of being generous, and the sort of thing that would normally be thought boring is ordinariness or pedantry, rather than the property of being ordinary or the property of being pedantic. And since, as we have seen, things like ordinariness, wisdom and generosity are kinds of tropes, we are led to

⁵Notice that this is a property which *does* apply directly to kinds themselves rather than to their instances. I take it that this is why Moltmann tends to hedge her claims by saying that kinds cannot bear *ordinary* properties.

⁶These last two claims are somewhat speculative on my part, since Moltmann only mentions $\lambda x.[\text{the reification of } x \text{ is a property}]$ as a denotation for the predicate ‘property’. We could make do with this single denotation for ‘property’ if the reification of a property were just that property itself (i.e. if, on the domain of properties, reification were the identity function). Moltmann is however quite clear that reification is only defined on the domain of kinds, not that of properties. See her definition of *reif* at Moltmann (2004, p. 27).

the conclusion that predicatively quantified sentences “do not range over the possible meanings of predicates ... but rather over just the kinds of things that the relevant nominalizations refer to,” that is, over kinds of tropes (Moltmann, 2004, p. 447). The property-based account of predicative quantification should therefore be rejected.

The substitution problem discussed by Moltmann and the one we looked at in the last chapter are in certain respects rather similar. In both cases, it is argued first, that the fact that property descriptions fail to be intersubstitutable with a certain class of expressions shows that the members of this class do not denote properties, and second, that predicative quantifiers ought to be understood as quantifying over the entities denoted by the members of this other class, rather than over properties. The two cases differ in that whereas we earlier took it for granted that predicative quantifiers quantify over the things denoted by predicates like ‘happy’, Moltmann argues that they instead quantify over the things denoted by the nominalizations of such adjectival predicates.

In the next section, I’ll try to argue that the proponent of the property-based view of predicative quantification needn’t accept the second part of Moltmann’s argument, but can continue to hold that predicative quantifiers quantify over the entities denoted by predicates — that is, we are assuming, over properties. Strictly, this is all we need to do to defend the property-based view against Moltmann’s challenge. However, given the similarities between the two substitution problems we’ve considered, there does, as I’ve already remarked, remain the interesting subsidiary question of whether the kind of considerations that allowed us to avoid the conclusion that predicates fail to denote properties may also let us avoid the conclusion that predicate nominalizations fail to denote properties. I’ll therefore go on to consider that issue after having addressed the direct challenge Moltmann presents against the property-based view.

4.3 Restricted Predicative Quantification

Let us, for the purpose of discussing the second part of Moltmann’s argument, accept her claim that adjective nominalizations do indeed denote kinds of tropes, understood as differing in the manner indicated earlier from the properties denoted by predicative expressions and property descriptions. Moltmann, as we’ve seen, appeals to sentences like ‘John is something boring’ and ‘John is something Mary admires’ to show that predicative quantification involves quantification over kinds of tropes rather than properties. She takes it that the phrases ‘boring’ and ‘Mary

admires' respectively function to restrict the range of the predicative quantifier in these two sentences. We might therefore represent these sentences as follows:

- (4.4) (a) [Some_X: X is boring] [John is X].
 (b) [Some_X: Mary admires X] [John is X].

To fix some terminology, let's call the phrase after the colon ':' the restrictor, and the phrase enclosed by the second pair of brackets the matrix. Furthermore, call an expression that can be substituted for the variable 'X' a specifier of the phrase in which the variable occurs. Thus 'ordinariness', for example, counts as a specifier of the restrictor in (4.4a) and 'wisdom' counts as a specifier of the restrictor in (4.4b). Similarly, the adjectives 'ordinary' and 'wise' respectively count as specifiers of the matrix phrases in (4.4a) and (4.4b). We can also identify specifiers by asking whether the expression can occur as the subject in a copular construction with a free-relative derived from the phrase that is to be specified.⁷ Thus, we can say that wisdom is what Mary admires, and that wise is what John is, thereby again identifying 'wisdom' and 'wise' as specifiers of, respectively, the restrictor and matrix phrases in (4.4b)

With this terminology in hand, Moltmann's argument can be understood as relying on the following two premises. First, that the restrictors in the above sentences have adjective nominalizations as their most natural specifiers. And second, that a quantifier should be construed as ranging over whatever entities are denoted by the expressions that function as natural specifiers of the restrictor of the quantifier. Given these two claims, we can conclude that the quantifiers in the above two sentences range over kinds of tropes, rather than properties, since these are (we are assuming) what adjective nominalizations denote.

Notice that the argument as I've reconstructed it appeals to the notion of a *natural* specifier. By this I mean that although e.g. 'the property of being wise' does, on purely grammatical grounds, count as a specifier of the restrictor 'Mary admires' — in the sense that 'Mary admires the property of being wise' is a grammatical sentence — it is nevertheless not a natural specifier of the phrase, since the resultant sentence is clearly false, and thus misses the intent of the original quantified sentence. A more natural specifier is the nominalization 'wisdom', since wisdom is what Mary would naturally be said to admire. Similarly, although 'wisdom' counts as a specifier of the matrix phrase 'John is' on purely grammatical grounds, it is

⁷Recall here our discussion of free relatives in relation to Dummett's Fregean proposal in the last chapter.

again not a natural specifier, since ‘John is wisdom’ again misses the intent of the sentence. A more natural specifier here is the adjective ‘wise’, since wise is what one would naturally say John is.

There are, I think, two reasons to be suspicious of this argument, however. First, as our discussion of natural specification makes plain, there is something decidedly odd about the sentences Moltmann appeals to in arguing for her conclusion. Sentences like ‘John is something Mary admires’ are peculiar in that no single expression counts as a natural specifier of both the restrictor *and* the matrix phrase. In specifying what Mary admires, it is most natural to use an adjective nominalization like ‘wisdom — we want to say that wisdom is what Mary admires — whereas in specifying what John is, it is most natural to use an adjective like wise — we want to say that wise is what John is. There is therefore, so to speak, no one thing that functions both as what Mary admires and what John is.

Contrast a sentence like ‘John is something Mary has always wanted to be’, which we might parse as follows:

(4.5) [Some_X: Mary has always wanted to be X] [John is X].

This sentence doesn’t suffer from the difficulty we encounter with Moltmann’s examples. Here a single expression, such as ‘wise’, counts as a natural specifier of both the restrictor and the matrix phrase. We can, in other words, here say that wise is both what John is and what Mary has always wanted to be. I don’t want to go so far as to say that the absence of a single specifier shows that her example sentences are therefore *ungrammatical*. I for example agree with Moltmann (2003a, p. 455) that ‘John is something Mary admires’ sounds better than ‘John is something Mary has’ (the property of being wise, say). But the oddity of the sentences she focuses on should, I think, give us pause, and at the very least lead us to be somewhat reluctant about relying on them in drawing conclusions about the nature of predicative quantification quite generally.

A second, related worry concerns the premise Moltmann implicitly appeals to in her argument, according to which a quantifier should be construed as ranging over whatever entities are denoted by the expressions that function as natural specifiers of the restrictor phrase. There is, after all, an obvious alternative. We could instead maintain that a quantifier serves to quantify over the entities denoted by the expressions that naturally specify the matrix phrase instead. If we adopt this alternative view, we will conclude that the quantifier in ‘John is something Mary admires’ serves to quantify over the entities denoted by such adjectival expressions,

i.e. over properties, and not over the entities denoted by the corresponding adjective nominalizations, as Moltmann would have it.

Indeed, Moltmann's insistence that we look towards the restrictor rather than the matrix phrase generates certain difficulties. Consider again the sentence 'John is something Mary has always wanted to be'. As already noted, here the restrictor takes adjectives like 'wise' as its most natural specifiers, given that wise (rather than wisdom) is presumably what Mary has always wanted to be. If we adopt Moltmann's view of the matter, we will therefore say that *this* quantifier quantifies over the kind of entities denoted by expressions like 'wise', that is, over properties. And yet the quantifier in 'John is something Mary has always wanted to be' might strike us as being of the same sort as the quantifier in 'John is something Mary admires'. It therefore looks like Moltmann's view will force us to conclude that sentences which involve what appear to be the same sort of quantifier nevertheless involve quantification over different sorts of things. If were to look towards specifiers of the matrix phrase instead, we wouldn't get this divergence.

We can complicate matters further. For to whatever extent "mixed" specifier sentences like 'John is something Mary admires' are acceptable, "doubly mixed" sentences like the following will presumably have to be counted as acceptable as well:

- (4.6) (a) John is something Mary admires and has always wanted to be.
 (b) [Some_X: Mary admires X and Mary has always wanted to be X] [John is X]

In this doubly mixed case, Moltmann's view simply doesn't deliver any verdict whatsoever as to what is being quantified over, since there are *no* expressions that can be used to naturally specify the restrictor in this sentence. The alternative proposal, by contrast, would again let us say that we here have quantification over properties.

I don't want to suggest that we will *invariably* do better to look towards the specifiers of the matrix phrase. Similar problems could be generated were we to adopt that policy. Take for instance the following sentence:

- (4.7) (a) Mary admires something John is.
 (b) [Some_X: John is X] [Mary admires X]

If we focus on the specifiers of the matrix phrase to the exclusion of those of the restrictor, then we will have to say that this sentence now involves quantification

over kinds of tropes rather than properties. And yet, we are here arguably again dealing with a predicative quantifier (though more on this below), so we would again have to say that sentences which seem involve the same sort of quantifier involve quantification over different sorts of things.

My point, rather, is that there isn't any particularly good reason why we should *privilege* the specifiers of the restrictor over those of the matrix phrase when it comes to determining what a given quantifier quantifies over. As we've seen, the policy of focusing solely on the specifiers of the restrictor generates certain difficulties. If anything, we should probably look at the specifiers of *both*. Furthermore, there are good reasons to think that predicative quantifiers do quantify over the semantic values of predicates. This is because a quantifier can only be classified as properly *predicative* (rather than nominal) if it binds at least one variable in predicate position. Consider the following sequence of sentences:

- (4.8) (a) John bought something Mary wanted (namely that red hat).
 (b) John loathes something Mary admires (namely wisdom).
 (c) John is something Mary admires (namely ???).
 (d) John is something Mary has always wanted to be (namely wise).

(4.8a) clearly involves nominal quantification; innocent reflection would suggest that although (4.8b) involves quantification over different kinds of things, it still involves nominal quantification; (4.8c) is less clear, because it involves mixed specification; it is only once we get to (4.8d) that we have an *uncontroversial* example of actual predicative quantification. It seems to me that looking towards natural specifiers (of both restrictors and matrix phrases) is a good guide when it comes to determining what a given quantifier quantifies over. But if we are interested in what predicative quantifiers quantify over, then we would, I think, do best to look at the specifiers of uncontroversial cases like (4.8d). And if we begin with these kinds of cases, we will conclude that predicative quantifiers quantify over the things denoted by predicates like 'wise'. I therefore don't think Moltmann's argument offers us convincing reason to reject the claim that predicative quantifiers quantify over properties.

That having been said, her examples do raise an interesting question. For if predicative quantifiers quantify over properties, as the property-based view claims and the above reflections once again suggest, how can a phrase whose natural specifiers denote kinds of tropes restrict the range of properties quantified over by predicative quantifiers? There are several possible responses here. One option would

be to simply deny Moltmann's claim that adjective nominalizations fail to denote properties. We'll consider the tenability of this sort of response in the next few sections. Alternatively, one might insist that Moltmann's sentences are odd to the point that we needn't offer a semantic account of them. But there is also a third possibility.

As Moltmann's discussion of reification itself indicates, there is a very close connection between kinds of tropes and properties. Given a kind of trope it is a straightforward matter to identify the property that corresponds to it: it is simply the property of which all (and only) the instances of the kind of trope in question are concrete manifestation. Similarly, given a property, one can straightforwardly identify the kind of trope to which it corresponds: it is simply the kind of trope all (and only) the instances of which are concrete manifestations of the property in question. Thus, to ordinariness there corresponds the property of being ordinary, since all the instances of ordinariness are concrete manifestations of the property of being ordinary, and to the property of being ordinary there corresponds ordinariness, since concrete manifestations of the property of being ordinary are what all instances of ordinariness are.

In view of this one-one correspondence between properties and kinds of tropes, it is relatively easy to see how an appeal to kinds of tropes could serve to restrict the range of properties that are relevant to a given predicatively quantified sentence. The truth conditions of 'John is something Mary admires', for example, seem to be along the following lines: John instantiates some property that corresponds to a kind of trope the instances of which Mary admires. The view that predicative quantification involves quantification over properties therefore appears to be compatible with the idea that the range of properties quantified over may be restricted by appeal to corresponding kinds of tropes. Of course, since kinds of tropes do, so to speak, make an appearance in the truth conditions of this sentence, there is a sense in which the sentence we're considering *does* involve quantification over kinds of tropes. What we should reject is the conclusion that its doing so shows that it *fails* to involve quantification over properties. The position we would adopt is an intermediate one: predicative quantification in all cases involves quantification over properties, but may in some cases additionally involves quantification over kinds of tropes. "Pure" cases of predicative quantification, such as 'John is something Mary has always wanted to be', involve quantification over properties only, whereas "mixed" and "doubly mixed" cases like 'John is something Mary admires' and 'John is something Mary admires and has always wanted to be' involve quantification over properties as well as over the kinds of tropes that correspond to those properties.

4.4 Do We Need Propertyphobic Kinds?

That, at any rate, is the kind of view we might adopt if we accept Moltmann's claim that adjective nominalizations denote different sorts of things than do predicates and property descriptions. But should we accept that claim? Although I don't believe Moltmann's view is untenable, it also isn't clear that the considerations she calls on in support of that view leave us with no choice but to adopt it.

We have just observed that kinds of tropes, as Moltmann construes them, stand in a one-one correspondence to properties. But in view of this rather intimate connection between kinds of tropes and properties, we might well wonder why exactly we should distinguish the two in the first place. Moltmann's argument for the distinction, it will be recalled, derived from the fact that sentences like 'ordinariness is boring', which involve adjective nominalizations, have different truth conditions from sentences like 'the property of being ordinary is boring', that involve the corresponding property description. The thought being that this shift in truth conditions can only be explained by postulating a fundamental difference in the sort of entities that property descriptions and adjective nominalizations respectively denote: it is because kinds of tropes are by nature unable to bear ordinary properties that a special application of Abelardian predicates like 'boring' is triggered.⁸ It isn't clear, however, that this is the only way to explain the phenomenon.

After all, when we looked at the Fregean response to our earlier substitution problem, we saw that the phenomena the Fregean attempted to explain by postulating a difference in the nature of the entities denoted by predicates and property descriptions could also be explained by other means. This naturally raises the question of whether moves in the vicinity of those that helped us avoid the Fregean's unnameables may also be available to help us avoid Moltmann's propertyphobic kinds.

4.5 A Parallel Problem With Propositions

In order to assess Moltmann's argument, it will be helpful to compare the substitution problem she calls attention to with a related substitution problem involving expressions that seem to denote propositions. It is usually assumed that that-clauses

⁸I borrow the term 'Abelardian predicate' from Noonan (1991), who uses it to describe "predicates whose reference is affected by the subject term to which they are attached" (Noonan, 1991, p. 188). I will here use the term more loosely to describe expressions whose meaning, or, as the case may be, "manner of application", in some way depends on what other expressions it occurs in combination with.

(TCs) denote propositions. Thus we might say that the TC ‘that the earth’s temperature is rising’ denotes the propositions that the earth’s temperature is rising. It is now natural to assume that the proposition description (PD) ‘the proposition that the earth’s temperature is rising’ denotes the same entity.⁹ This view seems to be borne out by the fact that we can substitute the two expressions *salva veritate* in contexts like the following:¹⁰

- (4.9) (a) Scientists have established [that the earth’s temperature is rising]
 (b) Scientists have established [the proposition that the earth’s temperature is rising]

- (4.10) (a) Oscar accepts [that the earth’s temperature is rising].
 (b) Oscar accepts [the proposition that the earth’s temperature is rising].

Notice that such contexts also allow the substitution of a proper name of the relevant proposition (call such expressions PNs, for ‘proposition names’). Let’s call the proposition that the earth’s temperature is rising the Climate Change Hypothesis. We can then say things like

- (4.11) (a) Scientists have established [the Climate Change Hypothesis].
 (b) Oscar accepts [the Climate Change Hypothesis].

But just as the substitution of adjective nominalizations for property descriptions in certain cases leads to a change in truth conditions, so there are also contexts in which substitution of PDs or PNs for TCs leads to a change in truth conditions. Consider the following:¹¹

- (4.12) (a) Oscar fears [that the earth’s temperature is rising]
 (b) Oscar fears [the proposition that the earth’s temperature is rising]
 (c) Oscar fears [the Climate Change Hypothesis]

⁹Many aspects of the way in which I present this substitution problem, including the abbreviations I use, are derived from King (2002).

¹⁰Other verbs that seem to allow such substitutions include ‘prove’, ‘assert’, ‘demonstrate’, ‘accept’, and ‘doubt’. See King (2002).

¹¹Other Abelardian verbs in relation to which substitution of PDs for TCs leads to change in truth conditions include ‘remember’, ‘understand’, ‘hear’, ‘desire’, ‘expect’, and ‘recommend’. See King (2002).

- (4.13) (a) Oscar knows [that the earth's temperature is rising]
 (b) Oscar knows [the proposition that the earth's temperature is rising]
 (c) Oscar knows [the Climate Change Hypothesis]

In (4.12a) we are saying that Oscar is anxious about the state of the earth's climate, whereas in (4.12b) and (4.12c) we are saying that Oscar is afraid of a certain abstract object. Similarly, in (4.13a) we are saying that Oscar knows something to be true, whereas in (4.13b) and (4.13c) we are saying that he is acquainted, or familiar, with a certain proposition.

The parallels with Moltmann's substitution problem are striking. First, just as there are contexts that resist the substitution of property descriptions for adjective nominalizations, in addition to those that do not, so there are contexts that resist the substitution of PDs for TCs, in addition to those that do not. Second, just as the shift in truth conditions that results from e.g. substituting 'the property of being ordinary' for 'ordinariness' in 'ordinariness is boring' seems to be due to a shift in the manner of application of 'boring', so, as King (2002) has argued, the shift in truth conditions that results from e.g. substituting 'the proposition that the earth's temperature is rising' for 'that the earth's temperature is rising' in 'Oscar knows that the earth's temperature is rising' seems to be due to a shift in the meaning of 'knows'. And finally, just as ordinary proper names trigger the same application of 'boring' as do property descriptions, so ordinary proper names trigger the same meaning of e.g. 'knows' that is triggered by PDs. The sentence 'Oscar knows Alice', for example, involves the acquaintance sense of 'knows' that we also find in 'Oscar knows the proposition that the earth's temperature is rising', rather than the knowing-to-be true sense that we find in 'Oscar knows that the earth's temperature is rising'.¹²

¹²King (2002) suggests that verbs like 'fear' and 'know' exhibit polysemy rather than full-blown ambiguity. However we wish to characterize the relevant change in meaning, the thought that there is such a change seems to me rather plausible. First, it does intuitively seem right that e.g. the fearing involved in fearing that something is the case is different from the fearing involved in fearing some object or other. This intuition is, as King (2002) notes, borne out in gapping tests. It e.g. sounds odd to say 'Oscar fears clowns and Alice that the earth's temperature is rising'. Second, at least in the case of 'knows', many languages lexicalize the different meanings. Thus 'Oscar knows that the temperature is rising' translates into German as 'Oscar *weiss* dass die Temperatur steigt', whereas 'Oscar knows Moritz' translates as 'Oscar *kennt* Moritz'. (Compare also French 'savoir' versus 'connaître', and Hungarian 'tudni' versus 'ismerni'.) The same can't, unfortunately, be said for other Abelardian verbs. E.g. 'fear', 'understand', and 'hear' all have a single correlate in German ('fürchten', 'verstehen', and 'hören').

We therefore face a similar challenge in the present case as we did in the case of Moltmann's substitution problem: we again have to explain the shift in meaning that is triggered when Abelardian verbs like 'know' or 'fear' occur in combination with a TC rather than a PD or PN. One option is to again react in a broadly Fregean manner, and conclude that TCs like 'that the earth's temperature is rising' therefore don't denote the same things as do the corresponding PDs or PNs, and indeed, that they don't denote the same *sort* of thing as do ordinary nominal expressions. The thought would again be that it is the peculiar nature of the entities denoted by TCs that triggers the shift in meaning that we find in connection with Abelardian verbs like 'fear' and 'know'. Proposals along these general lines are endorsed by Pryor (2007) as well as by Moltmann herself in her (2003b).¹³

King (2002) reaches a different conclusion. Instead of postulating a peculiar denotation for TCs, he calls attention to the difference in syntactic category between TCs, on the one hand, and PDs and PNs on the other. TCs are clauses, whereas definite descriptions and proper names are usually classified as either DPs or NPs. They also exhibit distributional differences: in addition to substitution resistant Abelardian verbs and substitution allowing verbs, there are verbs which only take TC complements

(4.14) (a) Oscar hopes [that the earth's temperature is rising]

(b) * Oscar hopes [the proposition that the earth's temperature is rising]¹⁴

We could therefore explain the meaning shifts by maintaining that Abelardian verbs are sensitive to the syntax of the complement, rather than to its denotation. If 'know' is followed by a TC, for example, the meaning that is triggered requires the denotation of the subject expression to know-to-be-true the proposition denoted by the complement, whereas if 'know' is followed by a PD or PN, the meaning that is triggered requires the denotation of the subject expression to be acquainted with the proposition denoted by the complement. Similarly for 'fear' and the rest.

¹³Pryor's and Moltmann's views, though both broadly Fregean in rejecting the claim that TCs denote the sort of items also capable of being denoted by PDs or ordinary names, are nevertheless quite different in detail. Pryor (2007) just argues that PDs and TCs fail to have the same sort of semantic value. Moltmann (2003b), by contrast, endorses a kind of latter-day version of Russell's multiple relations theory of judgment, holding that "a *that*-clause does not denote or express anything at all, but rather provides a configuration of propositional elements that are to be linked in the way specified by the attitude verbs" (Moltmann, 2003b, p. 78).

¹⁴Other verbs that only allow TCs include 'say' and 'wish'.

King (2002) however points out a difficulty for his alternative account, having to do with the fact that we can existentially generalize on sentences involving TCs while retaining the TC meaning of the relevant verb, as in:

- (4.15) (a) Oscar knows that the earth's temperature is rising.
 (b) So Oscar knows something.

The trouble is that the quantificational 'something' seems to be an NP, meaning that "'something', 'everything', and 'nothing' appear to provide singular exceptions to our claim that [a substitution resistant verb] expresses its NP [meaning] when it has an NP complement, and that it expresses its TC [meaning] when and only when it has a TC complement" (King, 2002, p. 362).

King finds this phenomenon puzzling, writing that he is "not at all sure why 'something', 'everything', and 'nothing' behave in this exceptional way" (King, 2002, p. 362). A broadly Fregean account of the shift in meaning doesn't face this problem, by contrast. Since the Fregean view postulates that the meaning of the relevant verb is triggered by the denotation of its complement, a Fregean could explain the fact that an Abelardian verb is able to retain its TC meaning in combination with quantifiers like 'something' by holding that, in such cases, the quantifier in question ranges over the sort of entities denoted by TCs, thus triggering the TC appropriate meaning. Indeed Pryor (2007) appeals to just this point in support of his view over King's alternative.

Our discussion of predicative quantification in the last chapter suggests a way out, however.¹⁵ I there proposed that we construe the difference between predicative expressions and the corresponding property descriptions not in terms of the kind of thing they have as their semantic values, but in terms of an independent semantically relevant feature that captures type-like information. This secondary semantic feature can be captured either by associating expressions with an explicit representation of their semantic type, or (as I prefer) by distinguishing the semantic relations they bear to their semantic values. This allows us to explain the difference between a predicatively quantified sentence like 'Oscar is something he has always

¹⁵King (2002) recognizes that the phenomenon of predicative quantification bears on the difficulty he faces, but doesn't pursue the analogy. Having noted that the predicatively quantified sentence 'John is everything his mother wanted him to be' is "fine even though the 'substitution instances' of 'everything' include expressions from different syntactic categories (for example 'a good father', 'kind' ...)", he simply writes that the fact that "'everything', 'something', and 'nothing' allow 'substitution instance' from different syntactic categories is probably related to their odd behavior noted [in relation to substitution resistant verbs]" (King, 2002, n27).

dreamed of being’ and a nominally quantified sentence like ‘Oscar lost something he bought’ by similarly distinguishing the type representation associated with the bound variables or, alternatively, the semantic relation the bound variables bear to their values.

We could now make a parallel move in the present case. Thus we might say that although PDs and the corresponding TCs have the same semantic value, they nevertheless differ with regard to a secondary semantically relevant feature — to have a terminological placeholder, let’s call this their “semantic category.” So although the TC ‘that the earth’s temperature is rising’ has the same semantic value as the corresponding PD ‘the proposition that the earth’s temperature is rising’, the two belong to different semantic categories. The change in truth conditions that occurs in connection with Abelardian verbs like ‘know’ is, then, due to a difference in the semantic category of the complement, rather than a difference in the syntax or the sort of thing denoted by the complement. We can then again transfer that treatment to bound variables, saying that ‘knows’ retains its TC appropriate meaning in ‘Oscar knows something’ because the variable bound by the quantifier belongs to the semantic category appropriate to TCs, rather than the one appropriate to PDs. Such a view would let us explain the peculiarity of the quantifier in ‘Oscar knows something’, which Pryor (2007) presses against King (2002), while retaining the essentials of King’s view.¹⁶

Before returning to Moltmann’s argument, let me say a word about how one might fill in this talk of semantic category. I have been talking of “semantic category” rather than “semantic type” because it seems to me important to distinguish the issues arising in connection with the nominal/predicative distinction from the issues arising in connection with the TC/PD distinction (as well as the the property description/adjective nominalization distinction). One important function of semantic types is to indicate the argument structure of an expression. In classifying an expression as being of type $\langle N, S \rangle$ (or: as being ascriptive), one is pointing

¹⁶Rosefeldt (2008) argues for a view along these lines. He spells out the difference in what I’ve called “semantic category” in terms of a difference in the semantic relation TCs and PDs bear to their semantic values, holding that although TCs have propositions as their semantic values, they do not *refer to* those propositions in the way singular terms do. He also proposes to explicate the nominal/predicative distinction in terms of a difference in the semantic relations involved. Curiously, he however does not incorporate his proposal into the semantics he sketches, writing that “we should not expect to save the difference between expressions of the form ‘the proposition that S’ and ‘that S’ when translating them into the suggested type-theoretic language” (Rosefeldt, 2008, p. 326). I find this somewhat odd. We are, after all, trying to give an account of the semantics of certain expressions of English, so that we *should* expect our theoretical representation to reflect whatever features of English we deem semantically relevant.

out that it is “unsaturated” or predicative, in the sense of having an open argument position, in contrast to expressions of type N (or: referring expressions), which are “saturated”, in the sense of having no open argument positions. TCs are, in this respect, also saturated, since they can — as we noted above, in connection with verbs like ‘establish’ — appear in many of the positions in which PDs and proper names can appear. In postulating a difference in semantic category between TCs and PDs, we would therefore seem to be advocating a *subdivision* among referring expressions. I propose to mark this point terminologically by speaking, as I have been, of semantic *categories* as opposed to semantic *types*. The proposal, then, is that TCs, PDs, and PNs all of type N , i.e. that they are all referring, but that they belong to different *categories*, say N_1 (for names and definite descriptions, including PDs and PNs) and N_2 (for TCs).¹⁷

The advisability of making such a distinction between type and category gains further support if we look at the behavior of quantifiers. We have already remarked on the need to construe the quantifier in a sentence like ‘Oscar knows something’ differently depending on whether ‘knows’ is construed as taking its knowing-to-be-true meaning or its being-acquainted-with meaning. We can now flesh this out by saying that whereas the quantifier binds a variable of the N_2 variety on the knowing-to-be-true interpretation, it binds a variable of the N_1 variety on the being-acquainted-with interpretation. But what about the quantifier in a sentence like ‘Scientists have established something’? Since ‘establish’ allows both TC and PD complements, this sentence should have as its instances (should follow from) sentences involving either TC or PD complements. We can make sense of this by holding that in this case, the quantifier binds a variable of an undifferentiated referential type — a type that includes both PDs and TCs. Both semantic categories and semantic relations (or types) thus earn their keep in the analysis of quantification.

¹⁷Since our distinction between category N_1 and category N_2 expressions represents a subdivision among N type expressions, I would be more reluctant to substitute a “semantic relations account” for a type theoretic, or rather category theoretic, account in the present case than I was in the case of the nominal/predicative distinction. For whereas the thought that predicative expressions bear a different semantic relation than do nominal expressions to their semantic values has some intuitive pull, there is, it seems to me, rather less of an intuitive pull towards the thought that different nominal expressions bear different semantic relations to their semantic values. More importantly, the kind of considerations which recommend the semantic relations account over the type-representation account in the case of the nominal/predicative distinction are absent in the present case. Contrast again Rosefeldt (2008), who favors a semantic relations account in both cases. (Though he doesn’t, I should say, do so by way of *rejecting* our type/category theoretic alternative, but simply by way of rejecting what I’ve called the Fregean “denotational” proposal)

4.6 How to Avoid Propertyphobic Kinds

The way to avoid Moltmann's propertyphobic kinds of tropes should now be obvious. Rather than take the Fregean route, and claim that the shift in meaning we find in the case of Abelardian predicates like 'boring' is due to the distinctive sort of entity denoted by adjective nominalizations as opposed to property descriptions (or ordinary names), we instead say that adjective nominalizations belong to a different semantic category than do property descriptions and other nominal expressions, and that Abelardian predicates like 'boring' are sensitive to the semantic category of their complement.

We would, in other words, postulate a semantic category N_3 to which we assign adjective nominalizations like 'ordinariness' and 'courage', distinct from the semantic category N_1 to which property descriptions and proper names belong. Again, these semantic categories would represent a subdivision among referring expressions, given that adjective nominalizations and "ordinary" nominal expressions are both, on the face of it, ultimately nominal or referential in character. The shift in the meaning of Abelardian predicates like 'boring' is then triggered not by the nature of the thing denoted by the expression in subject position, but rather by the semantic category to which that expression belongs: if the subject term belongs to the category N_1 , 'boring' applies in its standard way to the denotation of that term, whereas if the subject term belongs to the category N_3 , a special application of 'boring' is triggered. Instead of applying directly to the semantic value of 'ordinariness' (which, we are now taking it, is the same as the semantic value of 'the property of being ordinary'), it instead applies (in a generic fashion) to the concrete manifestations of the property of being ordinary. We can thereby secure Moltmann's truth conditions for sentences like 'ordinariness is boring' without holding that 'ordinariness' and 'the property of being ordinary' denote different items.

Non-Abelardian predicates that do allow free substitution of property descriptions and adjective nominalizations, on the other hand, can be treated as being insensitive to the difference between these categories. Consider the predicate 'property', for instance. Since it allows free substitution of property description for adjective nominalizations, we can let it apply in the standard way irrespective of whether it occurs in combination with an expression belonging to the category N_1 or one belonging to the category N_3 . Of course, none of this is to say that the sort of semantic theory that emerges from our proposal will have an edge in terms of simplicity over the kind of semantic theory that Moltmann recommends. For where she invokes a difference in the nature of what is denoted, we will instead invoke a difference in semantic category. All I want to point out is that we we need not

take the existence of Abelardian predicates like ‘boring’ to *force* us into accepting Moltmann’s claim that adjective nominalizations and the corresponding property descriptions fail to denote the same items.

4.7 Back to Quantifiers

Moltmann, however, anticipates a view along the lines of our alternative account, and offers an objection to it. According to the view she considers, the “special application [of Abelardian predicates] would be traced to the syntactic status of the kind referring term” rather than to the nature of the thing referred to (Moltmann, 2004, 2003a, p. 26, p. 460). Her objection is that such a view would not be able to make sense of sentences like the following:

(4.16) There are several things John hates, namely his wife, dishonesty, and greed.

The worry, as I understand it, is that if we were to syntactically distinguish adjective nominalizations from ordinary nominal expressions like ‘his wife’, then we would also want to introduce two classes of variables: those that syntactically act like adjective nominalizations (triggering special application of Abelardian predicates), and those that syntactically act like ordinary nominal expressions (and thus don’t trigger special application). Having done this, however, we will then have difficulty making sense of a sentence like the above. For the quantifier that occurs in this sentence appears to simultaneously quantify into adjective-nominalization-position and ordinary-nominal-position — or, to put it the way Moltmann would prefer, the quantifier appears to simultaneously quantify over ordinary objects and over kinds of tropes — meaning that the variables the quantifier binds must be construed as somehow “syntactically ambiguous” between the adjective nominalization syntax and the ordinary nominal syntax. And it isn’t obvious how to make sense of such syntactic ambiguity or underspecification. Moltmann’s view, by contrast, doesn’t face this difficulty. Since she is working with a syntactically uniform class of variables that can take both objects and kinds of tropes as their values, she can allow that in her example sentence the quantifier “ranges over objects and over kinds simultaneously” (Moltmann, 2004, p. 26).

Although the view Moltmann discusses appeals to an alleged syntactic distinction between adjective nominalizations and property descriptions, her objection can be adapted to the proposal outlined above. The objection would be that if we distinguish adjective nominalizations from ordinary referring terms by appeal to a difference in semantic category, rather than by appeal to a difference in the nature of the

entities denoted, then we must also introduce two classes of variables: those that belong to category N_3 (triggering special application of Abelardian predicates), and those that belong to category N_1 (and thus don't trigger special application). But then we will face difficulties with (4.16), since, from our perspective, the quantifier in that sentence will appear to bind a variable that is somehow ambiguous between these two categories.

There are, I think, two things to be said about this objection. First, recall that King (2002) was troubled by the fact that a quantified sentence like

(4.17) Oscar knows something

seemed to be ambiguous between two senses of 'know'. In particular, (4.17) seems to be capable of being interpreted as either saying that there is some proposition that Oscar knows to be true, or as saying that there is some object with which Oscar is acquainted. We proposed to explain this fact by saying that the variable bound by 'something' can be either of category N_2 (thus generating the knows-to-be-true reading) or of category N_1 (thus generating the acquaintance reading). Moltmann, as we've seen, is, in general, similarly inclined to postulate different readings for sentences containing predicates like 'boring' or 'hates', depending on whether the predicate occurs in combination with an ordinary nominal expression (such as a proper name or a property description) or in combination with an adjective nominalization. Thus, whereas a sentence like 'John hates his wife' simply says that John stands in the hating relation to the entity denoted by 'his wife', the sentence 'John hates dishonesty' says, not that John stands in the hating relation to the entity denoted by 'dishonesty', but rather that he stands in the hating relation to *instances* of that entity.

Given this view about 'hates', one would expect Moltmann to adopt a view parallel to King's when it comes to quantified sentences, and claim that:

(4.18) John hates something.

is capable of (at least) two readings: it could either be interpreted as saying that there is some entity which is hated by John, or as saying that there is some entity (some kind) the instances of which are hated by John.¹⁸ If we took this view on the matter, then we would regard Moltmann's

¹⁸It could perhaps also be interpreted as saying that there is some proposition such that John, so to speak, hates it's being the case that this proposition is true. That is, the sort of reading one would get if one read 'John hates something' as a generalization of 'John hates that his dog won't obey him'.

(4.19) There are several things John hates, namely his wife, dishonesty, and greed.

as subtly ill-formed. This sentence would be rather like the sentence ‘There are several things Oscar knows, namely his wife, that the earth’s temperature is rising, and that he needs to get a haircut.’ Such strings are zeugmatic — versions of the same phenomenon one finds in more egregious cases like ‘You are free to execute your laws and your citizens as you see fit’ and ‘She came home in a flood of tears and a bath chair’. These strings are not the sort of thing one needs to give a compositional account of. They are rather like two sentences compressed into one. It will therefore suffice if we can explain our handle on zeugmatically quantified sentences like ‘There are several things John hates, namely his wife, dishonesty, and greed’ via our grasp of the meaning of non-zeugmatically quantified sentences like ‘There is something John hates (namely dishonesty)’ and ‘There is something John hates (namely his wife)’. And of course neither of these pose a problem for someone who distinguishes variables of category N_1 and variables of category N_3 .

This, however, is not the view of the matter Moltmann as a matter of fact does take. Although she parallels King in claiming that certain expressions are Abelardian, and thus generate different readings depending on what kind of expression they occur in combination with, she does not follow King in thinking that *quantified* sentences containing these Abelardian expressions involve one reading rather than the other.¹⁹ Thus although she postulates two manners of application for ‘hates’, she does not think that ‘John hates something’ or ‘John hates several things’ determinately select one manner of application of ‘hates’ over the other. One worries here about whether such a view is ultimately coherent: if expressions like ‘hates’ really are Abelardian, one would expect them to exhibit one or the other of the available readings in quantified and unquantified sentences alike. But Moltmann will presumably just insist that it is a basic linguistic datum that, although the relevant verbs are Abelardian, quantified sentences containing these verbs nevertheless don’t involve one reading to the exclusion of the other. This is perhaps surprising, but it is a datum, and so something we need to explain.

This brings me to my second point. For even if we accept Moltmann’s claim that in quantified contexts, Abelardian predicates are indeterminate with regard to

¹⁹Compare Pryor (2007), who reacts in a manner parallel to Moltmann when it comes to the sentences King (2002) judges to be ill-formed. Thus while Pryor agrees with King that the sentence ‘John expects that set theory is consistent, and Kristen reporters’ is infelicitous, he holds that the sentence ‘John fears reporters, and that he will be judged a fool’ is “perfectly acceptable” (Pryor, 2007, p. 229). He would presumably say the same thing about a quantified sentence like ‘John fears several things, namely reporters, clowns, and that he will be judged a fool’. I am similarly suspicious of the grammaticality of such sentences as I am about the examples Moltmann offers.

which reading they take, that needn't obviously undermine a proposal couched in terms of semantic categories. For as we've already noted, the semantic categories N_1 and N_3 are naturally understood as marking a subdivision among expressions of type N , that is, among referring expressions. We might therefore treat the quantifier in Moltmann's 'There are several things John hates' as binding a variable of the undifferentiated type N — a variable that is referential, but not subcategorized more narrowly as belong to either category N_1 or N_3 . When interpreting such a sentence, we could then construe the undifferentiated referential variable as belonging to one or the other of the two more narrow categories. But the quantifier itself wouldn't determinately force either reading, thereby accommodating Moltmann's intuition.

That having been said, I do remain suspicious of her judgments on the matter. King's view that a quantified sentence like 'John knows something' isn't simply indeterminate about which sense of 'knows' is in question, but rather (in a given context) determinately takes one or the other of the two readings he identifies, seems to me correct. Furthermore, I find the the parallels between the phenomena involving TCs and PDs and those involving adjective nominalizations and property descriptions striking. I am inclined to think that the parallels extend to the quantified cases, and that 'John hates something' therefore isn't simply indeterminate as to which sense of 'hates' is involved either.

4.8 Leibniz's Law

Let me close by addressing a different problem that seems to beset the the kind of view I've been discussing, on which property descriptions and the corresponding adjective nominalizations denote the same thing, or have the same semantic value. Consider Leibniz's Law, which, using a predicative quantifier, we could state as follows:

$$(4.20) \quad \forall X \forall y \forall z (y = z \supset Xy \equiv Xz)$$

This looks like it will entail as one of its instances that:

$$(4.21) \quad (\text{The property of being courageous} = \text{Courage}) \supset (\text{The property of being courageous is admirable} \equiv \text{Courage is admirable})$$

This now poses a problem, however. Let's take it for granted that while courage is indeed admirable, the property of being courageous is no more admirable than is the

number two, or any other abstract object. Given this, we must, given the above conditional, conclude that the property of being courageous is not identical to courage. Assuming disquotation for the truth predicate (at least in identity contexts), a proponent of the semantic categories view, who holds that ‘courage’ and ‘the property of being courageous’ denote (or, qua nominal expressions, refer to) the same thing, therefore has to accept that the following Principle of Semantic Ascent is false for certain choices of α and β :

$$(4.22) \quad \lceil \alpha = \beta \rceil \text{ is true} \equiv \text{Den}(\alpha) = \text{Den}(\beta)$$

Moltmann, by contrast, needn’t draw this conclusion, since she denies that ‘courage’ and ‘the property of being courageous’ denote the same thing.

One option here would be to just bite the bullet and accept that the Principle of Semantic Ascent is not true for certain choice of α and β . This move isn’t particularly appealing, however. True, the claim that the Principle of Semantic Ascent holds for *every* choice of α and β isn’t particularly plausible. A proponent of the property-based view will, for example, grant that, on a certain understanding, it is true that $\text{Den}(\text{‘happy’}) = \text{Den}(\text{‘the property of being happy’})$, but of course won’t want grant that this commits him to saying that ‘happy is identical to the property of being happy’ is therefore true, given that it isn’t even well formed. But the application of the Principle of Semantic Ascent with which we are here dealing is not like that, since ‘courage is identical to the property of being courageous’ is well-formed. So while it may be sensible enough to reject the application of the principle if one of the expressions involved is predicative, such a move is rather less attractive in cases where both of the expressions involved are nominal, as both ‘courage’ and ‘the property of being courageous’ are.

A more appealing move for a proponent of the semantic categories view to make is to finesse Leibniz’s Law. Suppose, as we have been, that predicates denote properties. If we now also hold that property descriptions (e.g. ‘the property of being courageous’) and the corresponding adjective nominalizations (‘courage’) denote the same thing, then the fact that these expressions are not substitutable relative to predicates like ‘admirable’ suggests that ‘admirable’ denotes a different property depending on which kind of expression it occurs in combination with. Thus, we might say that if ‘admirable’ occurs together with a property description (or any category N_1 expression), it denotes $\lambda x[x \text{ is admirable}]$, whereas if it occurs together with a category N_3 expression like ‘courage’, it denotes $\lambda x[\text{concrete manifestations of } x \text{ are generally admirable}]$. Given this view, we can plausibly hold that we haven’t here encountered a violation of Leibniz’s Law. The thought behind

Leibniz’s Law is that if x and y are identical, then every property that x has is also a property that y has, and vice versa — this is also how we will understand the statement of the law offered above, given that we are treating predicative quantifiers as quantifying over properties. But now, since ‘admirable’ denotes different properties depending on whether it occurs in combination with an expression of category N_1 or category N_3 , we do not have a violation of the law. We aren’t, in other words, committed to the claim that there is a property that the property of being courageous both has and fails to have, but just the claim that whereas it has the property $\lambda x[\text{concrete manifestations of } x \text{ are generally admirable}]$, it does not have the property $\lambda x[x \text{ is admirable}]$.²⁰

As my presentation of Moltmann’s view likely made plain, the idea that Abelardian predicates like ‘boring’ or ‘admirable’ denote different properties depending on what kind of expression they occur in combination with is not one that Moltmann finds congenial. She prefers to think of the change in truth conditions that occurs upon the substitution of property descriptions for adjective nominalizations as involving a difference in the *manner of application* of the predicate. Within a framework that appeals to semantic categories, this idea could be implemented by distinguishing different compositional clauses for Abelardian predicates occurring with category N_1 and category N_3 expressions, as follows:²¹

N_1 Composition: If $\text{Cat}(\alpha) = N_1$ and $\text{Typ}(\beta) = \langle N, S \rangle$, $\lceil \beta(\alpha) \rceil$ is true iff $\text{Den}(\alpha)$ instantiates $\text{Den}(\beta)$.

N_3 Composition: If $\text{Cat}(\alpha) = N_3$ and $\text{Typ}(\beta) = \langle N, S \rangle$, $\lceil \beta(\alpha) \rceil$ is true iff concrete manifestations of $\text{Den}(\alpha)$ instantiate $\text{Den}(\beta)$.

Using compositional clauses of this sort, we will predict the same difference in truth conditions between e.g. ‘Courage is admirable’ and ‘The property of being courageous is admirable’, but without postulating a different denotations for ‘admirable’.

²⁰Noonan’s (1991) discussion of Abelardian predicates focuses on the kind of puzzles involving Leibniz’s Law which I’ve raised here, particularly in connection with modal vocabulary. He recommends a solution of the present sort for the cases he is concerned with. As Noonan (2011) makes clear, it is important to distinguish Leibniz’s Law from the “substitutivity principle”, according to which the truth of ‘ $a = b$ ’ is supposed to guarantee that the *expressions* ‘ a ’ and ‘ b ’ are intersubstitutable *salva veritate* in any *sentence*. Leibniz’s Law is not metalinguistic, and “says nothing about substitutivity of codesignators in any language” (Noonan, 2011).

²¹I here phrase these clauses in terms of a type function, rather than in terms of a distinct semantic relation appropriate to predicative expressions. The clause can be rewritten so as to invoke semantic relations by replacing the claim that $\text{Typ}(\beta) = \langle N, S \rangle$ with the claim that β is ascriptive (i.e. that it ascribes something), and then appealing to $\text{Asc}(\beta)$ rather than $\text{Den}(\beta)$.

Moltmann's reason for preferring this sort of account over the view that Abelardian predicates denote different properties in different contexts is that there are cases where "the predicate alone cannot force a kind-related versus an object-related meaning" (Moltmann, 2004, p. 23). The thought, as I understand it, is essentially the one canvassed above: quantified sentences like 'John admires something' are, according to Moltmann, indeterminate as to whether their instances involve adjective nominalizations or ordinary nominal expressions, that is, indeterminate as to whether they involve quantification over kinds of tropes or ordinary objects. This presumably wouldn't be possible if there were two different denotations for 'admires', however, since the quantified sentence would then determinately involve either the meaning of 'admires' appropriate to adjective nominalizations or the meaning of 'admires' appropriate to ordinary nominal expressions.

As I've already said, I am not convinced by her judgments regarding these cases. But even if we were to go with compositional clauses like the above, rather than postulating a shift in the denotation of Abelardian predicates, we are arguably still not committed to a genuine violation of Leibniz's Law. On this view, the sentences 'Courage is admirable' and 'The property of being courageous is admirable' will, in a sense, involve predication of the same property, namely $\lambda x[x \text{ is admirable}]$. But now, the property is no longer being predicated of the same things: in the former sentence, it is predicated of concrete manifestations of the property of being courageous, whereas in the latter it is predicated of the property of being courageous itself. We in other words still don't have a case where one and the same thing is said to both have and not have a certain property, and so still don't have a genuine violation of Leibniz's Law.

I therefore don't think that Leibniz's Law undermines a view according to which property descriptions and adjective nominalizations have the same semantic values. Again, I don't take any of what I've said here to show that Moltmann's opposing view, on which there is a distinction in semantic values, is untenable. Her view does not, for instance, encounter the difficulties that beset the Fregean approach in the case of the nominal/predicative contrast. As we saw in the last chapter, the trouble with the Fregean's claim that predicative expressions denote entities of a fundamentally different sort from those denoted by nominal expressions is that it leads to difficulties when it comes to staying what it is that a particular predicative expression denotes, since we can't e.g. say that 'happy' denotes happy. Moltmann's view that adjective nominalizations denote entities of a different sort from those denoted by property descriptions does not have this problem, since no grammatical constraints stand in the way of our saying that 'ordinariness' denotes ordinariness, and not the property of being ordinary. What I do hope to have shown is just that

neither the substitution failures Moltmann calls our attention to, nor the puzzles involving Leibniz's Law that we just looked at, force her view on us. More importantly, even if we grant her claim that adjective nominalizations denote kinds of tropes, this shouldn't, as I've argued, lead us to reject the property-based account of predicative quantification in favor of an account according to which predicative quantifiers uniformly quantify over kinds of tropes.

5 Ontological Commitment

5.1 The Objection

The second objection to the property-based account of predicative quantification that I outlined in the introduction runs something like this: for it to be the case that there is something Oscar is, it suffices that Oscar be happy (or dumbstruck, or impatient, or whatever), and surely accepting the claim that Oscar is happy (or dumbstruck, or impatient, or whatever) does not commit us to properties. So accepting that there is something Oscar is doesn't commit us to properties either. But the property-based view treats predicative quantifiers as quantifying over properties, that is, as binding variables which range over properties, or take properties as their values. The truth of 'There is something Oscar is' thus requires that we count some property Oscar instantiates among the potential values of the variable bound by the predicative quantifier. And as Quine famously urged, we are ontologically committed to whatever we must admit into the range of our variables to secure the truth of the sentences we accept. The property-based account therefore forces us to say that in accepting predicatively quantified sentences as true, we ontologically commit ourselves to properties, contrary to what our initial reflections suggested.

The objection implicitly appeals to a principle originally invoked by A.N. Prior in his "Platonism and Quantification" (1971), and more recently endorsed by Wright (2007) and Rayo and Yablo (2001), according to which "the commitments of a quantified claim are supposed to line up with those of its substitution instances" (Rayo and Yablo, 2001). Following Wright (2007), call this the Principle of Neutrality. Granted that we fail to involve ourselves in commitment to properties in accepting that Oscar is happy, Neutrality tells us that we likewise fail to involve ourselves in commitment to properties when we hold that Oscar is *something*. It is then charged that this conclusion about ontological commitment is incompatible

with accounts according to which predicative quantification involves quantification over properties. Notice that the objection therefore rests on the assumption that there is a direct connection between *ontological commitment*, on the one hand, and the *range of quantification*, on the other. It is because of this assumed connection that Neutrality, which concerns ontological commitment, is said to be incompatible with the semantic treatment put forward on the property-based view.

Thus we find Rayo and Yablo arguing, at least partially by appeal to Neutrality, that natural language predicative quantifiers “carry no ontological commitments” (Rayo and Yablo, 2001, p. 81). They then apparently take this to show that such quantifiers do not quantify “*over anything*” (Rayo and Yablo, 2001, p. 78), and that translating formulas of second order logic into predicatively quantified English sentences therefore offers us a way of understanding second order logic without construing its quantifiers “as ranging over abstract objects” (Rayo and Yablo, 2001, p. 77). Unlike Rayo and Yablo, Wright (2007) demurs from making pronouncements about the ontological commitments of predicatively quantified statements. He still echoes the general sentiment which connects ontological commitment to the range of quantification, however, when he urges that Neutrality should move us to abandon the orthodox Quinean conception which “sees quantification into a particular kind of syntactic position as essentially involving a *range of entities* associated with expressions fitted to occupy that kind of position and as providing the resources to generalize about such entities” (Wright, 2007, p. 3).

Although Neutrality lets us state the objection in vivid terms, the thesis itself isn’t the crucial thing. What is important about Neutrality is that it calls our attention to the instances of quantified statements in the course of our reflection on those quantified statements themselves. This appeal to instances serves to draw attention to the fact that we are quantifying into the position of predicates, rather than names, and that we are therefore dealing with something distinct from ordinary, nominal quantification. At bottom, what motivates the objection is just the thought that predicative quantification, once recognized as such and properly distinguished from nominal quantification, doesn’t intuitively appear to involve us in ontological commitments. From there, it is then concluded that it is incumbent on us to construe such quantifiers in a way that doesn’t represent them as ranging over anything, or, more specifically, as generalizing about a domain of properties. What I want to look at in this chapter is where this connection between ontological commitment and the range of quantification comes from. Or rather, since we know where it comes from, I want to look back at Quine’s classic discussion of the matter in ‘On What There is’, and consider whether the lessons we ought to take from it vindicate the kind of objection I’ve been sketching.

Before entering in on that task, however, let me once again register two methodological points. First, I take the objector to be raising a worry about ontological commitment, not ontology. A nominalist might hold that there simply are no such things as properties, and that any semantic theory which appeals to properties is therefore to be rejected. Or a certain kind of realist might hold that properties are sparse, and that any semantic theory that appeals to abundant properties is therefore to be rejected. Both of these are ways of criticizing the property-based view, but it is not the form of criticism that I take the objection to be aiming at. The question isn't whether properties exist, but whether predicative quantifiers quantify over them. As Rayo and Yablo (2001) nicely put it, even if one grants that properties exist, one needn't "necessarily think second-order statements quantify over them — not any more than a belief in angles requires one to think that second-order quantifiers range over angels" (Rayo and Yablo, 2001, p. 77).

Neither is the objector claiming that although properties exist, it is nevertheless quite generally illegitimate to appeal to them in the context of a semantic theory. I will, for example, suppose that the objector grants that it is appropriate to invoke properties when giving the semantics of expressions like 'the property of being surly' and of quantified sentences like 'Oscar has some property'. I also assume that the objector grants that such nominally quantified sentences carry commitment to properties. Indeed, the objector isn't even claiming that predicatively quantified sentences are, as a whole, free from commitment to properties. She wouldn't, for instance, deny that despite being predicatively quantified, the sentence 'There is something that any property is (namely, abstract)' incurs commitment to properties. The point, again, is just that predicative quantifiers don't, all on their own, involve us in such commitments, and that run-of-the-mill examples of predicatively quantified sentences — sentences like 'There is something Oscar is', or 'Oscar is something Alice wants to be' — therefore should not be construed as involving quantification over properties. What I want to look into is this last move, which connects intuitions of ontological innocence to the demand that predicative quantifiers not be construed as quantifying over abstract entities like properties.

5.2 Quine on Ontological Commitment

I'll begin by first sketching in broad outline the route that Quine takes to arrive at his famous dictum that "to be is to be the value of a variable." I will then turn to some interpretive issues regarding Quine's argument, and distinguish two ways in which Quine can be understood as arriving at the slogan he bequeathed to us.

5.2.1 Quine's Argument in Outline

In both 'On What There Is' (1948) and the earlier 'Designation and Existence' (1939), Quine argues for his conclusion by asking how we ought to understand the way the expression 'Pegasus' works, specifically, how it works in negative existential sentences like 'Pegasus does not exist' or 'Pegasus is not'. On the face of it, this sentence would appear to be self-undermining. For in order that it be true that Pegasus doesn't exist, there must apparently be something that doesn't exist. But that is false, and so it also can't be true that Pegasus doesn't exist. Or to put it in the formal mode, for the sentence 'Pegasus does not exist' to be true, or even truth-evaluable, for that matter, the expression 'Pegasus' must apparently name something. But if there is something which 'Pegasus' names, then a sentence which says of that thing that it doesn't exist must invariably be false. The only way out of this predicament, it would seem, is to suppose that 'Pegasus' names some sort of Meinongian entity which merely subsists, but does not exist — something that is available to be referred to, but of which one may yet truly say that it is not. But surely this "solution" does more to label the difficulty than to solve it, to borrow a phrase from Davidson.

Quine proposes to resolve this puzzle in the manner of Russell in 'On Denoting', namely by appeal to the theory of descriptions. Rather than treat 'Pegasus' as a name, which would force us to confront the question of what it is that it names, we instead treat it as a covert description — perhaps, as Quine suggests in both his (1939) and (1948), as 'the winged horse captured by Bellerophon'. If we are worried about finding a suitable description corresponding to 'Pegasus', we can instead simply regard 'Pegasus' as determining a primitive predicate:

If the notion of Pegasus had been so obscure or so basic a one that no pat translation into a descriptive phrase had offered itself along familiar lines, we could still have availed ourselves of the following artificial and trivial-seeming device: we could have appealed to the *ex hypothesi* unanalyzable, irreducible attribute of *being Pegasus*, adopting, for its expression, the verb 'is-Pegasus', or 'pegasizes'. The noun 'Pegasus' itself could then be treated as derivative, and identified after all with a description: 'the thing that is-Pegasus', 'the thing that pegasizes'.¹

The truth conditions of 'Pegasus does not exist' can then be given as follows: $\neg\exists x[\text{Pegasizes}(x) \wedge \forall y(\text{Pegasizes}(y) \supset x = y)]$. And there is of course no mystery about how *this* could be true.

¹Quine (1948, p. 27).

Quine considers this solution to the parochial problem of negative existentials to be of quite general significance for the question of ontological commitment. As he sees it, what the theory of descriptions shows us is that “there is a gulf between meaning and naming” (Quine, 1948, p. 28). By demonstrating that “a singular term need not name to be significant,” Russell’s theory frees us from “the delusion that the meaningfulness of a statement containing a singular term presupposes an entity named by the term” (Quine, 1948, p. 28). It is on the basis of this claim that Quine reaches the conclusion that ontological commitment ultimately derives solely from the use of quantifiers, that is, that we commit ourselves to the existence of e.g. a winged horse not by using what purports to be a name of a winged horse, but simply by saying that *there is something* that is a winged horse. Since the precise connection between these points is something we’ll want to consider further, let me quote in full the summary Quine offers of his argument:

This is essentially the *only* way we can involve ourselves in ontological commitments: by our use of bound variables. The use of alleged names is no criterion, for we can repudiate their namehood at the drop of a hat unless the assumption of a corresponding entity can be spotted in the things we affirm in terms of bound variables. Names are, in fact, altogether immaterial to the ontological issue, for I have shown, in connection with ‘Pegasus’ and ‘pegasize’, that names can be converted to descriptions, and Russell has shown that descriptions can be eliminated. Whatever we can say with the help of names can be said in a language which shuns names altogether. To be assumed as an entity is, purely and simply, to be reckoned as the value of a variable.²

5.2.2 The Role of Descriptions

To begin, notice that Quine doesn’t present an *argument* to the effect that quantifiers are ontologically committing.³ That they are is taken for granted. This seems fair enough: one does seem to ontologically commit oneself to e.g. a winged horse by saying that something is a winged horse, or that there is a winged horse. His argument doesn’t so much concern the claim that quantifiers are ontologically commit-

²Quine (1948, p. 32).

³Unless otherwise noted, I will for the time being follow Quine and use the term ‘quantifier’ to refer specifically to nominal quantifiers. I will also follow Quine in moving freely between quantificational statements like ‘something is a winged horse’ and existential statements like ‘there is a winged horse’ or ‘there is something that is a winged horse’.

ting, as it does the claim that they are the *only* way in which we involve ourselves in ontological commitment. We always knew quantifiers were sufficient for ontological commitment, so the thought goes; what Quine shows us is that they are also necessary. That they are necessary is somewhat less obvious, after all. We might have originally thought that an at least equally good way of committing oneself to the existence of something is through the use a singular term which refers, or at least purports to refer, to that thing. It is this idea that Quine apparently wants to disabuse us of. That much, I take it, is relatively clear. It is also clear that Quine seems to think that the theory of descriptions is central to this project. What is somewhat less clear is the precise shape his argument is meant to assume, and specifically, what role the theory of descriptions is supposed to play in it.

Quine's point cannot be that treating names as covert descriptions in general lets us regard those names as failing to introduce ontological commitments. Take the sentence 'Quine wrote *Word and Object*', and suppose we treat 'Quine' as a covert description, a disguised rendering of 'the thing that is-Quine' or 'the Quinizer', rather than as a name. Our sentence now doesn't contain any expression that names Quine. But the description we've inserted in place of the name does, as Russell would have put it, nevertheless denote Quine. Whether we treat the sentence as containing a name or a description seems in that sense irrelevant to the ontological question: Quine must exist in order for the sentence to be true either way.

The point is general. Any true sentence in which a description takes wide scope will be one in which the description denotes what the name which it replaces named. On the face of it, the theory of descriptions is only of ontological import when the relevant description can be regarded as taking narrow scope, as in Quine's 'Pegasus is not' — for only then can we consistently accept the truth of the original sentence without thereby allowing that there is an object named by the putative name. But since one can't in general presume that any sentence contains some constituent under which the description can take narrow scope, there is no reason to think that the theory of descriptions in general allows us to avoid taking singular terms to introduce ontological commitments.

What, then, is the relevance of the theory of descriptions to the issue of ontological commitment? I think there are two ways in which Quine saw these two issues as being related. I find the argument that emerges from the second of these two ways of spelling out the relationship between descriptions and ontological commitment ultimately more compelling, but it will be helpful to consider both.

5.2.3 The Quinean Purge

The first way of spelling out the relevance of descriptions to ontological commitment is suggested by Quine's claim, in the quote given earlier, that "whatever we can say with the help of names can be said in a language which shuns names altogether." On this view of the matter, what is important about the theory of descriptions is its *eliminative* character. It provides us with a recipe for converting any sentence that contains an apparent singular term into an equivalent sentence that contains only quantifiers and predicates. Quantifiers are not only sufficient, but also necessary, for ontological commitment, so the argument goes, because their main rival in the department of ontological commitment, viz. singular terms, ultimately don't exist, in the sense that they needn't be taken to constitute an irreducible semantic category. After the Quinean purge, the only singularly referring expressions that remain are variables under assignment, and so it is only insofar as we admit an object as a value of a variable that we ontologically commit ourselves to that object.

This route to Quine's conclusion is problematic, however. First, even if we grant the abstract possibility of uniformly treating names as covert descriptions, Quine hasn't shown that this is the right way to think about the semantics of names.⁴ It is not a thesis that Russell himself accepted, for instance — he retained a category of logically proper names. We might be willing to grant that there are problematic cases, such as 'Pegasus', where an apparent name is best treated along descriptivist lines. But this hardly serves as a convincing reason for subjecting proper names to that treatment quite generally. Someone who takes the referential status of names more seriously will be inclined towards a more conservative reaction: she will continue to treat names as referring expressions — introducing ontological commitment to a named entity — and set aside troubling cases like 'Pegasus' for special treatment. The problem of negative existentials, in other words, doesn't show that names *uniformly* function as covert descriptions, and that quantifiers are therefore indeed the only road to ontological commitment.

Second, one wonders how exactly Quine's purge is going to be carried out. How, that is, will we quite generally convert names into descriptions? In his (1939) and (at least initially) (1948), Quine suggests that 'Pegasus' can be con-

⁴This objection relies on the assumption that Quine intends his criterion to be a thesis about the way names function in natural language. See §2.5 below for further discussion. Note that I'm not claiming that the view that natural language names are covert descriptions is mistaken. See e.g. Elbourne (2005) and Matushansky (2006) for arguments in favor of this kind of view. I've also advocated such a view in Rieppel (2012). I just mean to point out that the considerations Quine offers aren't on their own convincing.

verted into a description by appeal to the predicate ‘winged horse that was captured by Bellerophon’. Set aside the fact that this predicate itself involves the name ‘Bellerophon’. The more serious question is whether we will be able to find a suitable predicate for every name we may wish to eliminate. To serve its purpose, the predicate has to somehow guarantee that the only thing that satisfies it is the bearer of the name we are aiming to eliminate. The problem here isn’t just that of finding a predicate that can be satisfied by at most one thing. Rather, it is that of finding a predicate which is in fact uniquely satisfied by the very object referred to by the name we want to eliminate. For if the predicate fails to be uniquely satisfied by just that object, replacing the name by the description won’t, except in fortuitous circumstances, generate a sentence equivalent to the sentence containing the name. And it isn’t clear how we will secure that guarantee.⁵ Absent that guarantee, however, it hasn’t been shown that “whatever we can say with the help of names can be said in a language which shuns names altogether.”

Quine, as we’ve seen, recognizes this problem, but claims that the task of finding a suitable predicate is in the end “no real restriction,” since we can simply appeal to the “unanalyzable, irreducible attribute of *being Pegasus*, adopting, for its expression, the verb ‘is-Pegasus’, or ‘pegasizes’.” He abandons the letter of this proposal, however, when he rejects Wyman’s suggestion that predicates have attributes as their meanings. (Though more on this below.) A more Quinean elaboration of the suggestion is presented in later writings.⁶ In *Philosophy of Logic* he writes that names are:

strictly redundant, for the following reason. Think of ‘*a*’ as a name, and think of ‘*Fa*’ as any sentence containing it. But clearly ‘*Fa*’ is equivalent to ‘ $\exists x(a = x \wedge Fx)$ ’. We see from this consideration that ‘*a*’ needs never occur except in the context ‘*a* =’. But we can as well render ‘*a* =’ always as a simple predicate ‘*A*’, thus abandoning the name ‘*a*’. ‘*Fa*’ gives way thus to ‘ $\exists x(Ax \wedge Fx)$ ’, where the predicate ‘*A*’ is true solely of the object *a*.⁷

⁵Compare Neale (2002, p. 45). Another worry in the vicinity, of course, is that this kind of classically descriptivist treatment will run afoul of the fact that names are rigid designators. Quine might be able to circumvent this problem by appealing to rigidified descriptions, however. The “trivial seeming device” discussed below represents another way to secure rigidity for descriptivized names.

⁶See Fara (2011) for an exploration of the historical developments of Quine’s views on the elimination of names.

⁷Quine (1970, p. 25).

And in *Word and Object*:

Purely referential occurrences of singular terms other than variables can be got down to the type ‘= *a*’ ... ‘= *a*’ taken as a whole is in effect a predicate, or general term; and general terms raise none of the problems that singular terms raise. What suggests itself is that ‘= Pegasus’, ‘= mama’, ‘= Socrates’, etc. be parsed anew as indissoluble general terms, no separate recognition of singular terms ‘Pegasus’, ‘mama’, ‘Socrates’, etc. being needed for other positions.⁸

There are worries about this proposal as well, however. On one reading, Quine is suggesting that the predicate ‘Socrates’ is just a notational abbreviation for the complex predicate ‘= Socrates’. But then the proposal looks like a bit of notational sleight-of-hand. We would still be covertly relying on the name in question, and so won’t really have eliminated names *qua* singular terms from our language after all.

On another reading, the predicate isn’t just an abbreviatory device. The suggestion, rather, is that we countenance genuinely simple predicate ‘Socrates’, and then (echoing the Ockhamist) give its semantics via a clause of the following sort:

‘Socrates’ applies to *a* iff $a = \text{Socrates}$

But even here, difficulties remain. First, it doesn’t look like we can adopt this strategy across the board. A clause like the above appeals to a particular object to specify the application conditions of the predicate in question. We are saying that the predicate ‘Socrates’ applies to something just in case that thing is identical to *Socrates*, the person. But we of course can’t do this when we turn to the predicate ‘Pegasus’: here there just *is* no object to which we can appeal in specifying the application conditions.

We can raise the same problem on the notational-abbreviation approach. Earlier in *Word and Object*, Quine points out that ‘ $\exists x(x = \text{Pegasus})$ ’ is neither true nor false, since ‘Pegasus’ fails to refer. Introducing a corresponding predicate is supposed to close this truth-value gap, so that ‘ $\exists x(\text{Pegasus}(x))$ ’ is now simply false. But if the predicate ‘Pegasus’ is just a reparsing of the complex predicate ‘= Pegasus’, then we don’t get this result. The open sentence ‘ $\text{Pegasus}(x)$ ’ will no more have a truth value (relative to an assignment of a value to ‘*x*’) than will the open sentence ‘ $x = \text{Pegasus}$ ’ which it reparses.

⁸Quine (1960, p. 178).

So while we may be able to apply Quine's strategy in the case of referring names like 'Socrates', we cannot apply it to empty names like 'Pegasus'. It looks like we will have to adopt a bifurcated policy. In the case of referring names, we specify the application conditions by appeal to the object that is the bearer of the name, thereby securing the guarantee that the predicate does indeed apply to the very thing we want it to apply to. In the case of empty names like 'Pegasus', on the other hand, we must specify application conditions using predicates like 'horse' and 'winged' — at any rate, not by appeal to Pegasus. But if we are required to pursue a bifurcated strategy anyhow, then it is again not clear what recommends Quine's purge over the more conservative proposal mentioned above, on which we continue to treat referring names as such, and only convert empty names like 'Pegasus' into descriptions.

The fact that application clauses like the above appeal to a particular, existing object also serve to raise a deeper worry. Part of what motivates Quine to appeal to the theory of descriptions is that it allegedly frees us from "the delusion that the meaningfulness of a statement containing a singular term presupposes an entity named by that term" (Quine, 1948, p. 28). But it isn't at all clear that Quine's strategy for eliminating the nonempty name 'Socrates' is consonant with this claim. For as I've said, we can only give the meaning of the predicate 'Socrates' in the suggested manner if there exists an entity — in this case Socrates — to be appealed to. It therefore looks like the meaningfulness of this predicate *does* presuppose the existence of an entity. Not the existence of a *named* entity perhaps, but the existence of an entity all the same. Quine's strategy therefore doesn't ultimately serve to relegate ontological commitment to quantifiers alone: we now have *predicates* that introduce ontological commitment. Quine seems to think that because predicates don't, in general, commit us to the existence of an entity to which the predicate applies (or is true of), transforming names into predicates will simply eradicate their ontological import. (Recall the claim that "general terms raise none of the problems that singular terms raise.") But that, I would argue, is wrong. Predicates suited to replace nonempty names retain the very ontological commitments of the names they were intended to eliminate.⁹

⁹Here's a more ontologically loaded way of putting the point. Suppose we take predicates to denote properties. Pursuing the analogue of Quine's strategy, we would then say that the predicate 'Socrates' denotes the property $\lambda x[x = \text{Socrates}]$. The existence of this property, however, presupposes the existence of Socrates — the property of being identical to Socrates, just like the property of having met Socrates, exists only if Socrates exists. So if we are taking the meaningfulness of a predicate to consist in its denoting a certain property, and that property presupposes the existence of a certain person, then the meaningfulness of the predicate itself presupposes the existence of that

There are thus two broad concerns one can raise about Quine's descriptivist elimination of names. First, we haven't been given good reason for thinking that names in general, rather than just problematic empty names, should be construed as covert descriptions. Second, it isn't clear that Quine's proposal, even if we do chose to adopt it, really serves to establish that quantifiers alone are in the business of introducing ontological commitment. I therefore don't find this route to Quine's conclusion particularly compelling.

5.2.4 The Vagaries of Existential Generalization

Lets therefore turn to the second, and I think ultimately more satisfying, argument that can be extracted from Quine's discussion. This second argument is hinted at in Quine's remark that "the use of alleged names is no criterion [of ontological commitment], for we can repudiate their namehood at the drop of a hat *unless the assumption of a corresponding entity can be spotted in the things we affirm in terms of bound variables*" (Quine, 1948, p. 32, my emphasis).

The thought here seems to be the following. When we first confront the question of ontological commitment, we might grant that accepting quantified sentences like 'there is a winged horse' is a way of committing oneself to the existence of something. But we might also be inclined to think that using a non-quantificational expression, in particular a name or other singular term, is an at least equally good way of doing so. On reflection, however, the view that quantificational expressions are indicative of ontological commitment does not support this latter position. For it may occur that we are willing to accept a sentence containing an expression that grammatically looks like a name, but not be willing to existentially generalize with respect to that expression. The sentence 'Pegasus is not' dramatizes this point particularly well: we all accept that Pegasus does not exist, but we would not want to allow that there is therefore something which does not exist. Or as Quine puts it, "'Pegasus' which is inflexibly a proper name grammatically speaking, can be used by persons who deny existence of its object" (Quine, 1969, p. 93). There are other cases as well. Consider, for instance, Quine's example of 'sake' and 'behalf' (Quine, 1960, p. 236). Suppose Oscar attended the meeting for Alice's sake. We will then allow that there is therefore some person for whose sake Oscar attended the meeting, but not that there is also some sake for which Oscar attended the meeting. Similarly, although we accept that Alice apologized on Oscar's behalf, and that there is someone on whose behalf Alice apologized, we wouldn't want to say

person.

that there is also some behalf on which she apologized. So although we are willing to existentially generalize on ‘Alice’ and ‘Oscar’, and perhaps also on possessives like ‘Oscar’s brother’, we aren’t willing to existentially generalize on superficially similar possessives like ‘Alice’s sake’ and ‘Oscar’s behalf’.

If we accept that quantificational locutions are indicative of ontological commitment, we therefore should not invariably take names or other singular terms as a sure guide to ontological commitment. A name is ontologically committing *only* to the extent that we regard existential generalization with respect to that name as valid. For it is only to the extent that we regard existential generalization as valid that we take the name to be the name of an object. That, after all, is precisely the idea behind existential generalization: if a sentence says of a *particular* object that it is F, then it must be valid to infer from that sentence that *some* object is F. And conversely, if the inference is not valid, then that must mean that the sentence in question does not say of a particular object that it is F. In Quine’s words, “the idea behind [existential generalization] is that whatever is true of the object named by a given singular term is true of something; and clearly the inference loses its justification when the singular term in question does not happen to name” (Quine, 1953b, p. 245).

On this view of the matter, the importance of the theory of descriptions does not lie in its eliminative character. Rather, its importance resides in the fact that it gives us a specific account of how one might consistently accept a sentence containing what grammatically looks like a singular term without accepting existential generalization with respect to that term. The emphasis is thus on the kind of inferences the theory licenses: “if Pegasus does not exist ... then according to Russell’s theory of descriptions there will be various true statements which can be turned into falsehoods by existentially generalizing with respect to the word ‘Pegasus’” (Quine, 1939, p. 706). Of course, as we observed above, the theory of descriptions only offers us a way of rejecting existential generalization in cases where the description fails to take wide scope (and cases where it doesn’t embed an ontologically committing predicate). But the particular way in which the theory of descriptions serves to account for failures of existential generalization isn’t what is ultimately important. What is important is just the general point that the use of a singular term does not *by itself* involve us in ontological commitment. To determine whether it does, we have to look at the way in which the term interacts with quantifiers, specifically, whether it is legitimate to existentially generalize with respect to it.

Unlike the earlier argument, this second version of Quine’s argument does not attempt to establish that names are “altogether immaterial to the ontological issue.” This version of the argument would allow us to claim that our language contains

names, and that these names may, to the extent that they name something, involve us in ontological commitments. Indeed, we might, as Quine suggests in “Designation and Existence”, ultimately want to simply define a name as “an expression with respect to which existential generalization is valid” (Quine, 1939, p. 706). Given such a definition of namehood, names are quite generally ontologically committing, and therefore anything but immaterial to the ontological issue. This of course doesn’t undermine the crucial point that Quine in the end wants to arrive at, namely that we ontologically commit ourselves to an object only insofar as it is admitted as the potential value of a variable. The contemplated definition of names simply serves to highlight the manner in which it is quantification that ultimately plays the decisive role: non-quantificational expressions may well be ontologically committing, but they are so *only* to the extent that their interaction with quantifiers reveals them to be so.

5.2.5 Regimentation

According to the argument as I’ve attempted to reconstruct it, Quine’s criterion tells us that we commit ourselves to the existence of an F by accepting the sentence ‘There is something that is an F’, or simply ‘Something is an F’. We may also ontologically commit ourselves by accepting a sentence containing a name, but only to the extent that it entails a quantified sentence that existentially generalizes with respect to the relevant name, i.e. only to the extent that “the assumption of a corresponding entity can be spotted in the things we affirm in terms of bound variables.” Quantification is, therefore, the final touchstone regarding ontological commitment: to be is to be the value of a variable.

I’ve here largely followed Quine’s discussion in ‘On What There is’ in considering the ontological commitments of ordinary English sentences. One might worry, however, whether we haven’t thereby left out a crucial aspect of Quine’s thinking on the matter. Quine is, after all, often understood as having recommended a two step process: first, translate a given sentence, or theory, into a formal language (Quine typically recommends the notation of first order logic for this purpose), and second, inquire into the commitments of that regimented sentence or theory. Thus we for instance find him writing that “it is only ... in reference to one or another real or imagined logical schematization of one or another part or all of science, that we can with full propriety inquire into ontological presupposition” (Quine, 1953a, p. 106). This role of regimentation seems to have been lost sight of in our reconstruction of Quine’s argument, and in the resultant criterion. Taken to its extreme, the role accorded to regimentation might even suggest that sentences of ordinary

English can't ultimately involve us in commitment at all. Quine for instance says that we can only loosely "speak of the ontological presuppositions at the level of ordinary language," and that such talk "makes sense just in so far as we have in mind some likeliest, most obvious way of schematizing the discourse in question along quantificational lines" (Quine, 1953a, p. 107). In *Word and Object*, he goes even further, and writes that "we cannot paraphrase our opponent's sentences into canonical notation for him and convict him of the consequences, for *there is no synonymy*" (Quine, 1960, p. 242, emphasis added). If regimented sentences involve us in commitment, but fail to be synonymous to the sentences of ordinary language they regiment, then ordinary language would appear to offer us no way in which to ontologically commit ourselves. Only regimented language can do that.

There are two things to be said about this. First, although Quine is often fairly reluctant to speak of ontological commitment in connection with ordinary language in later writings, that reluctance is largely absent from "On What There Is", his most famous discussion of the topic. He there regularly speaks of the ontological commitments of English sentences like 'Some dogs are white'. Furthermore, when it comes to the philosophical reception of his ideas, many who have invoked the notion of ontological commitment have done so in connection with sentences of ordinary language. Indeed, the objection to the property-based view of predicative quantification that we are discussing in this chapter requires that we be able to do so. So on a methodological level, I will continue to take it that Quine's criterion of ontological commitment is applicable to ordinary language.

Second, it isn't at all clear that Quine is entitled to some of the stronger claims he appears to make about the inapplicability of his criterion to sentences of ordinary language. Thus we for example find him writing that:

The artificial notation of logic is itself explained, of course, in ordinary language. ... To paraphrase a sentence of ordinary language into logical symbols is virtually to paraphrase it into a special part of still ordinary or semi-ordinary language. ... So we see that paraphrasing into logical symbols is after all not unlike what we do every day in paraphrasing sentences to avoid ambiguity.¹⁰

More concretely, he repeatedly insists that the quantifiers employed in the formal notation ultimately cannot be explained more clearly than by adverting to certain select locutions of ordinary language. In the paragraph preceding the one in which

¹⁰Quine (1960, p. 159).

we find the above quoted claim about lack of synonymy, we for example find Quine writing that:

Such is simply the intended sense of the quantifiers ‘ (x) ’ and ‘ $(\exists x)$ ’: ‘every object x is such that’, ‘there is an object x such that’. The quantifiers are encapsulations of these specially selected, unequivocally referential idioms of ordinary language.¹¹

The point is repeated in ‘Existence and Quantification’:

Existence is what existential quantification expresses. There are things of kind F if and only if $(\exists x)Fx$. This is as unhelpful as it is undebatable, since it is how one explains the symbolic notation of quantification to begin with. The fact is that it is unreasonable to ask for an explication of existence in simpler terms.¹²

But surely, if the quantifiers of our regimented notation can be rendered in ordinary English, there cannot be any bar in principle to translating at least simple sentences containing those quantifiers into English as well, thereby ontologically committing ourselves through ordinary language. If ‘ $\exists x[x$ is a winged horse]’ commits us to the existence of a winged horse, then the English ‘Something is a winged horse’ or ‘There is a winged horse’ must too, because the latter serve to explicate the content of the former. It is hard to see where the failure of synonymy would enter in. Indeed, despite his claim about lack of synonymy, Quine himself makes essentially this point when he writes that “to decline to explain oneself in terms of quantification, or in terms of those special idioms of ordinary language by which quantification is directly explained, is simply decline to disclose one’s referential intent” (Quine, 1960, p. 243, emphasis added).

Regimentation serves many purposes. It, for example, allows us to give clear expression to multiply quantified claims that it would be exceedingly cumbersome to formulate in ordinary language. It would be tiresome to give the definition of a dense ordering, say, without appeal to the quantifier-variable notation. Regimentation can also serve to clarify scope distinctions, such as between *de re* and *de dicto* readings of attitude ascriptions. More to the present point, it affords us the opportunity of laying our ontological cards on the table, so to speak. By specifying which formally regimented sentences we are prepared to accept, and, in particular,

¹¹Quine (1960, p. 242).

¹²Quine (1969, p. 97).

which existentially quantified sentences we accept, we lay bare in precise and unambiguous terms what ontological commitments we seek to involve ourselves in. But none of this is to say regimentation therefore provides us with an *exclusive* path to ontological commitment. The regimented sentences we offer up involve us in the commitments they do only because the quantifiers that occur in them are understood as translating our ordinary existential idioms. Those idioms themselves serve to commit us just as much, indeed, they do so more directly.

5.3 Quine on Quantifying Into Predicate Position

So much for Quine's criterion and the line of thought that seems to lead to it. Our primary concern here is with the commitments of sentences involving quantification into the position of predicates. How, then, should we think of the commitments of such sentences in light of Quine's discussion? Quine, for one, was quite clear that he regarded quantifiers binding variables in predicate position as ontologically committing. Indeed, a large part of his reason for rejecting quantification into predicate position was that such quantification illegitimately imports ontological commitment where there should be none.

As Quine sees it, predicates do not involve us in commitment to sets, properties, or other entities that offend the taste for desert landscapes:

We may say, for example, that some dogs are white and not thereby commit ourselves to recognizing either doghood or whiteness as entities. 'Some dogs are white' says that some things that are dogs are white; and, in order that this statement be true, the things over which the bound variable 'something' ranges must include some white dogs, but need not include doghood or whiteness.¹³

Quine allows that we may, consistent with the ontologically innocent character of predicates, make use of schematic letters in the position of predicates, as we might when e.g. giving the induction schema for Peano Arithmetic. Once we introduce quantifiers that bind genuine variables in predicate position, however, we cross the line, and must now be regarded as treating predicates as if they carried ontological commitments. Quine concludes that quantification of this sort is, *for that very reason*, to be rejected. He repeats this objection in a number of places. Let me give two representative examples:

¹³Quine (1948, p. 32).

When we say that some dogs are white ... we do not commit ourselves to such abstract entities as dogkind or the class of white things. Hence it is misleading to construe the words 'dog' and 'white' as names of such entities. But we do just that if in representing the form of $[(\exists x)(x \text{ is a dog} \wedge x \text{ is white})]$ as $'(\exists x)(Fx \wedge Gx)'$ we think of 'F' and 'G' as bindable class variables.¹⁴

There are those who use so-called predicate variables in predicate position and in quantifiers, writing things like $'\exists F Fx'$. The values of these variables are attributes; the constants substitutable for the variables are, we are told, predicates; so that predicates double as names of attributes. My complaint is that questions of existence and reference are slurred over through failure to mark distinctions.¹⁵

Quine regards the importation of illegitimate commitments as itself an objection to quantification into predicate position. He does have other reasons besides for being suspicious of quantification over abstract entities. In the case of properties, he for instance complains that the relevant criteria of individuation are insufficiently clear. He doesn't regard this problem as applying to sets, however.¹⁶ His most general objection against quantification into predicate position has squarely to do with ontological commitment.

The character of Quine's argument here is somewhat obscure, however. He insists that predicates are not names, and fail to involve us in commitment to sets or properties. He then maintains that by quantifying into the position of predicates, one *thereby* treats predicates as names of such entities, and thus as carrying ontological commitment. Quine's reliance on this Nominalization Thesis, as I'll call it, is clear in both of the above quotes, and more or less explicitly endorsed in the famous section of *Philosophy of Logic* entitled "Set Theory in Sheep's Clothing", where he writes that "to put the predicate letter 'F' in a quantifier, then, is to treat predicate position suddenly as name position, and hence to treat predicates as names of entities" (Quine, 1970, p. 67). Why we should accept this thesis is, however, rather unclear. It essentially amounts to the view that variables are by their very nature nominal. One might well resist this view, however, and hold that the contrast between nominal and predicative constants applies to variables as well.

¹⁴Quine (1953a, p. 113).

¹⁵Quine (1970, p. 28).

¹⁶See e.g. his discussion in Quine (1970, p. 67).

Why did Quine insist on the Nominalization Thesis despite the apparent availability of this alternative view? Since he didn't explicitly address the matter, we can only speculate. But I think his general views on ontological commitment, as presented earlier, provide some hints. I have already mentioned Quine's view that the existential quantifier ' $\exists x$ ' is a formal counterpart of the ordinary, ontologically committing locution 'there is an object x such that' or simply 'some object is such that'. Quantification is thus construed as a "device for talking in general of objects", forming an integral part of "the whole distinctly objectificatory apparatus of our language" (Quine, 1960, p. 242, p. 236). Other, non-quantificational expressions only involve us in ontological commitment insofar as they interact in the right way with this objectificatory apparatus. Apparent singular terms like 'Pegasus' or 'Alice's sake', for example, fail to involve us in commitment if we decline to existentially generalize with respect to them. We might, in light of this, then choose to single out the category of genuine names, that is, of constant expressions that actually do involve us in ontological commitment, by *defining* "names simply as those constant expressions which replace variables and are replaced by variables according to the usual logical laws of quantification" (Quine, 1939, p. 707).

When confronted with predicative quantifiers, Quine seems to have assumed that they likewise had to be understood as forming part of the objectificatory apparatus of language. The quantifier ' $\exists F$ ', he seems to have thought, must be read as saying 'there is some object F such that', or perhaps more restrictedly, as saying that 'there is some property (or set) F such that'. Quine suggests as much when he writes that "the quantifier ' $\exists F$ ' or ' $\forall F$ ' says ... that some or all entities of the sort named by predicates are thus and so" (Quine, 1970, p. 67). Given this objectificatory interpretation of predicative quantifiers, it is then no wonder that Quine took the practice of quantifying into the position of predicates as concomitant with the view that predicates are names. After all, if we follow the definitional proposal mentioned above, to be a name just *is* to be an expressions that is accessible to objectificatory quantifiers in this manner.

5.4 Prior on Quine and Predicative Quantification

It is this aspect of Quine's thinking that Prior (1971) was objecting to in the context of his discussion of what has been called the Principle of Neutrality. What Prior saw, and Quine apparently failed to see, or refused to accept, was that there are other ways of reading the formal ' $\exists F$ ' in ordinary English.

As Prior observes, English contains not only the sort of objectificatory, which is

to say nominal, quantifiers Quine focused on, but also various kinds of non nominal quantifiers. Thus, he for instance remarks that “no grammarian would count ‘somehow’ as anything but an adverb, functioning in ‘I hurt him somehow’ exactly as the adverbial phrase ‘by treading on his toe’ does in ‘I hurt him by treading on his toe,’” and more to the present point, that “in ‘He is something that I am not — kind’ ... the ... ‘something’ ... is quite clearly adjectival rather than nominal in force” (Prior, 1971, p. 37, p. 38). Rather than regard the formal ‘ $\exists F$ ’ as translating the nominal ‘there is some object F such that’, we can therefore instead regard it as translating the adjectival or predicative ‘something’ found in Prior’s ‘He is something that I am not’.

When Prior holds that predicative, and other non nominal quantifiers, fail to involve us in ontological commitment, he is thus objecting to Quine’s Nominalization Thesis, pointing out that “Quine has provided us no cogent reason for supposing that quantifying over non nominal variables in effect nominalizes them, and commits us to a belief in abstract objects corresponding to them” (Prior, 1971, p. 43). Quine held that allowing quantifiers to bind variables in predicate position amounts to treating predicates as names, which is to say as ontologically committing, because he thought such quantifiers had to be read using the objectificatory, ontologically committing idioms of ordinary language. But as Prior rightly observes, there isn’t any evident need to do so. Once we see this, Quine’s reasons for holding that such quantifiers are ontologically committing (and therefore to be rejected) lapse. By translating these quantifiers in a properly predicative manner, we remove them from the objectificatory apparatus, and thus reveal them to be no more in the business of introducing ontological commitment than are the predicates whose position is occupied by the variables they bind.

It bears emphasis that from the perspective of a Quinean conception of ontological commitment, this conclusion is in a way trivial. As we saw, ontological commitment is, on Quine’s view, in the first instance carried by nominal quantifiers, and, derivatively, by any expressions accessible to such quantifiers, that is, by names. To say — as Quine and Prior both do — that predicates aren’t ontologically committing is then just to remark on the fact that they are not accessible to nominal quantifiers, and are as such not names. Similarly, to say that quantifiers binding variables in predicate position fail to involve us in ontological commitment is just to remark on the fact that — as Prior saw but Quine seems not to have seen — such quantifiers aren’t nominal.

Quine’s resistance to the point Prior is here making is evident in his (to my knowledge) only explicit discussion of natural-language predicative quantification — a discussion occasioned by Geach’s (1951) criticism at a symposium on ‘On

What There Is'. Geach presses Quine on the same point Prior does: he argues that it would be wrong to claim that the sentence 'A and B both are something, viz., red' commits us not just to the concrete entities, A and B, but also to an abstract entity, what A and B both are, because (to paraphrase) 'what A and B both are' is itself a predicate, and thus not the name of an entity, abstract or otherwise. In his unusually caustic reply, Quine (1951) acknowledges that Geach's example differs from the one Quine put in the mouth of McX in 'On What There Is' — whereas McX "said that *redness* was what A and B both *had*," Geach "says that *red* (or the entity which 'red' stands for) is what A and B both *are*" (Quine, 1951, p. 157). Quine then however immediately proceeds to argue that the move from having to being is of no real importance.

Geach, as he sees it, is appealing to "something like the Theory of Types," and just pointing out that the theory precludes an all-inclusive notion of entity. But, he claims:

The fact remains that Mr. Geach is recognizing *concrete* entities, e.g., A and B, and *abstract*-entities like what A and B both "are". This fact remains, and remains meaningfully expressible, even though we accept a Theory of Types which forbids the word "entities" without qualifying adjective.¹⁷

Quine seems to be doing his best here to avoid recognizing the quantifier in Geach's example as properly predicative. Geach is not saying that, as Quine puts it, *the entity for which 'red' stands* is what A and B both "are"¹⁸ — he is saying that *red* is what A and B both are, and red is not an entity of any sort, concrete or abstract. This is not simply because the noun 'entity' hasn't been appropriately qualified, but because a sentence like 'red is an entity' is meaningless. The choice of color vocabulary slightly obscures the point, because color words, as Sellars (1985) stresses, seem to be able to function as both nouns and adjectives. But consider unambiguously adjectival expressions like 'happy' or 'impatient'. Geach's point is that it no more makes sense to say that what A and B both are is an entity, than it does to say that happy or impatient are entities. Adding a qualifying 'abstract', or some other indication of type hierarchical level, won't make it any more meaningful.

¹⁷Quine (1951, p. 158, emphasis added).

¹⁸Recall here Quine's parallel claim in the later *Philosophy of Logic* that "the quantifier '∃F' or '∀F' says ... that some or all *entities of the sort named by predicates* are thus and so" (Quine, 1970, p. 67, emphasis added).

The point Prior and Geach are urging against Quine, but which Quine doesn't want to accept, is that quantifying into the position of predicates does not rob predicates of their predicative status. The Nominalization Thesis is false. And once we recognize predicative quantifiers as predicative rather than nominal, or objectificatory, then, by Quine's criterion, such quantifiers fail to involve us in ontological commitments.

5.5 Ontological Commitment and the Range of Quantification

What is of importance to our present concern, however, is that this argument about the *ontological commitments* of predicative quantifiers doesn't directly bear on the question of whether such quantifiers *range over* abstract entities of a certain sort. To recognize that predicative quantifiers aren't nominal, and that quantifying into predicate position therefore does not amount to treating predicates as names, is not to show that predicates aren't semantically related to abstract objects at all, nor, therefore, is it to show that predicative quantifiers fail to quantify over anything.

Indeed, the idea that predicates could be related to abstract objects without being names of them is one Quine himself seems to find intelligible. He e.g. writes that "to withhold from general terms or predicates the status of names of classes is not to deny that there are often ... certain classes connected with predicates otherwise than in the fashion of being named" (Quine, 1953a, p. 115). He repeats the point in the "Set Theory in Sheep's Clothing" section, writing that "predicates have attributes as their 'intensions' or meanings (or would if there were attributes), and they have sets as their extensions; but they are names of neither" (Quine, 1970, p. 67). In the very next sentence, he then concludes, again apparently relying on his Nominalization Thesis, that "variables eligible for quantification *therefore* do not belong in predicate position" (Quine, 1970, p. 67, emphasis added).

But we needn't join Quine in that conclusion. Having followed Prior in rejecting the Nominalization Thesis, we no longer labor under the illusion that variables are by their very nature nominal. And once we see that the nominal/predicative contrast carries over to variables, we are free to adopt the same perspective on predicative variables that Quine seems to have been willing to entertain with respect to predicates: just as predicates may be semantically related to abstract objects without, for all that, naming them, so predicative variables may be semantically related to abstract objects (relative to an assignment) without naming them. Indeed, this is exactly the view that I argued, in Chapter 2, a friend of the property-based account of predicative quantification *should* adopt in view of the substitution failures we

there considered.

Of course, Prior would deny that non nominal quantifiers do range over abstract objects. But that is because he was a more through going nominalist than Quine, and held that there simply *are no* abstract objects around for them to range over. Nothing about his response to Quine, which simply involves pointing out the fact that predicative quantifiers needn't be construed nominally, forces this further conclusion on us, however. Recognizing that predicative quantifiers aren't nominal, and therefore don't (granted Quine's definition of the notion) carry any *ontological commitments*, does not show that they don't *range over* anything. These are separate issues.

The same point applies to Rayo and Yablo's Priorean conclusion that "non nominal quantifiers carry no commitments" (Rayo and Yablo, 2001, p. 81). They argue for this conclusion on the basis of the claim that "the phrases non nominal variables stand in for — phrases like 'by treading on him,' and 'kind' — do not refer" (Rayo and Yablo, 2001, p. 81). They take the question of whether a given phrase refers to amount to the question of whether "the phrase is referential *in the way that singular terms are*, so that someone using the phrase could reasonably be said to be *talking about* its referent, or purporting to talk about its purported referent" (Rayo and Yablo, 2001, n. 6, emphasis added). A phrase presumably only refers in the way a singular terms does if it *is* a singular term. We can perfectly well accept that non nominal expressions like 'kind' don't refer to abstract entities in this sense, i.e. aren't singular terms, and that predicative variables therefore aren't referential either. We can, if we like, then also adopt Quine's conception of ontological commitment, and take this to show that non nominal quantifiers therefore fail to carry ontological commitments.

But again, this does not show that predicative expressions like 'kind' don't stand for entities in a manner other than the way in which singular terms do, nor, therefore, that non nominal quantifiers don't range over abstract entities. The Priorean argument against the property-based view, in other words, conflates the question of whether a given quantifier *quantifies over* certain things with the question of whether the expressions into the position of which it quantifies *name or refer to* those things. These two issues, I want to emphasize, come apart.

5.6 Commitment: Broad and Narrow

That the view that predicative quantifiers — being non nominal — fail to carry *ontological commitment* is compatible with the view that such quantifiers neverthe-

less *range over* abstract entities of course rests squarely on the acceptability of the Quinean conception of ontological commitment, according to which such commitment is incurred solely through nominal, objectificatory quantification. And that conception is to some extent optional. We could understand the notion of ontological commitment more broadly, and say that a quantifier ontologically commits us to entities of a given sort just in case it ranges over entities of that sort in *whatever* manner. Given this broader notion, the property-based view of course *would* commit us to the claim that predicative quantifiers carry ontological commitment.

Is there a reason to prefer the narrower, Quinean conception of ontological commitment to this broader notion? Certain features of the narrow conception do make it attractive. For one thing, as the above quote from Rayo and Yablo shows, it is natural to regard ontological commitment as having to do with what a given statement is *about*, and to tie the relevant notion of aboutness to singular reference. We find this thought echoed by Parsons (1990), when he speaks of an “ontological intuition a little different from but complementing Quine’s, according to which ontological commitment is carried by the expressions that play the role of subjects in language and thus indicate what one is talking about” (Parsons, 1990, p. 328). Quine himself seems to invoke such a notion of aboutness in some of his discussions of ontological commitment, as when he for instance writes that “if ... the word ‘appendicitis’ designates an entity, then the statement ‘Appendicitis is dreaded’ is a statement *about* that entity. It affirms the dreadedness thereof, and implies the consequence that *something* is dreaded” (Quine, 1939, p. 705).¹⁹

Another thing that makes the Quinean notion of ontological commitment attractive is the “openness” of the domain of nominal quantification, as I put it in Chapter 2. When we inquire about ontological commitment, we are interested in what objects we are committing ourselves to. And objects, on at least one popular conception of what it is to be an object, just *are* the sorts of things that nominal quantifiers can range over and singular terms can refer to. This again isn’t to say that other quantifiers may not also range over objects. If we take predicative quantifiers to range over properties, then we are taking them to range over objects of a certain sort. But since their range is restricted to properties, we don’t thereby construe them as capable of ranging over *any* objects there may be. Nominal quantifiers, by contrast, are free from this sort of restriction. By confining our attention to nominal quantifiers, we therefore won’t restrict ourselves in terms of what objects we may

¹⁹Compare also Geach’s (1968) appeal to aboutness in connection with names, when he writes “we can determine whether the proposition [‘Jemima is a cat’] is true only when we know what it is about, and thus what the names contained in it stand for.”

ontologically commit ourselves to: even if we deny that the predicatively quantified ‘there is something Oscar is’ commits us to properties, we can still commit ourselves in the relevant respect through the nominally quantified ‘there is some property Oscar instantiates’. In view of the openness of the domain of nominal quantification, nominal quantifiers are therefore particularly well suited to function as the locus of ontological commitment in a way that non nominal quantifiers are not.

That having been said, if we allow that predicative quantifiers quantify over properties, then there is also something peculiar about opting for the narrow conception of ontological commitment. Sure, intuitions about namehood and aboutness suggest it. But why tie the notion of ontological commitment to these intuitions? Aboutness in particular is a notoriously slippery concept. Our ordinary notion of aboutness certainly does extend to cases of singular reference. It’s e.g. entirely natural to say that the sentence ‘Alice finds Oscar insufferable’ is about Alice and Oscar. But it also seems to extend beyond singular reference. It, for example, seems equally right to say that ‘it’s raining’ is about something, like the weather, even though this sentence contains no singular terms. Or consider Goodman’s (1961) discussion of the notion. He takes it that the predicate in ‘Maine prospers’ “designates” the class of things that prosper, and then proceeds to develop a notion of aboutness to capture that thought.²⁰ If we accept that predicates denote properties, and predicative quantifiers quantify over them, then the truth of a sentence containing a predicate or predicative quantifier requires the existence of properties. Intuitions about whether those sentences are about properties, or contain expressions that refer to properties, just aren’t relevant.

I won’t press the point, however, because my overarching claim is independent of it: the argument against the property-based account doesn’t go through on *either* conception of ontological commitment. The argument rests entirely on the observation that predicates aren’t names, that predicates don’t intuitively refer to things in the way singular terms do, and that predicates aren’t intuitively the kinds of expressions by means of which we *mention* or talk *about* objects, in the way that singular terms are. These observations are perfectly acceptable. We can then take a further step, and adopt the narrow, Quinean conception of ontological commitment. Given this conception, it is then legitimate to argue, with Prior, that since predicates aren’t names, and predicative quantifiers aren’t nominal (or nominalizing, as Quine seems to have thought), predicates and predicative quantifiers fail to incur ontolog-

²⁰See also Lewis (1988) for another example of a technical apparatus intended to capture a more inclusive notion of aboutness.

ical commitment. But to conclude on *this* basis that the property-based view ought therefore to be abandoned is not legitimate: the property-based view, as I've emphasized, doesn't force us to regard predicative quantifiers as being ontologically committing in *this* sense.

On the other hand, we could adopt the broad conception of ontological commitment. According to this conception, the property-based view indeed does treat predicative quantifiers as ontologically committing. But now we haven't been given any reason why the claim that predicative quantifiers are ontologically committing in this broad sense is indeed illegitimate. Intuitive judgments about reference or namehood support claims involving the narrow notion of ontological commitment, but these claims fail to undermine the property-based view. Claims that involve the broad notion, which *do* engage with the property-based view, on the other hand, cannot be supported simply by appeal to intuitive judgments about reference or namehood. But since the Priorean objection we've been considering in this chapter rests on just those judgments, it doesn't establish those stronger claims, and therefore doesn't constitute an objection to the property-based view.

5.7 Commitment and Entailment

To conclude, let me address a second, closely related argument concerning ontological commitment put forward by Rayo and Yablo (2001). The argument begins with the claim that 'He is kind and I am not' is committed only to him and me. Rayo and Yablo then observe that the predicatively quantified 'He is something that I am not' is *trivially entailed* by 'He is kind and I am not'. They hold that the inference would not be trivial "if 'he is something I am not' were committed to entities other than him and me" because "it is not a trivial matter whether these additional entities exist," and conclude that the quantified sentence therefore "isn't committed to entities other than him and me" (Rayo and Yablo, 2001, p. 81). One might then again try to leverage this conclusion against the property-based view: on that view, predicative quantifiers quantify over properties, and so the quantified sentence *would* be committed to properties. But since it isn't, the view has to be rejected.

Clearly, however, this argument from entailment is no more successful than the previous argument. We can grant that the entailment of the quantified sentence by its instance is trivial. We can also accept that trivial entailment is ontologically conservative, that is, that trivially entailed sentences do not incur commitments beyond those incurred by the sentences from which they trivially follow.²¹ But

²¹I take it that the qualifier 'trivial' is not incidental. The claim that entailment doesn't intro-

what this shows about the ontological commitments of the two sentences at issue again crucially depends on the notion of ontological commitment we are invoking.

What, after all, is it that supports the claim that ‘He is kind and I am not’ is committed only to him and me? Presumably just this: that the indexicals ‘he’ and ‘I’ are the only singular terms that occur in the sentence. But then, the notion of ontological commitment that’s involved is once again the narrow one. And as I’ve said, a friend of the property-based view can perfectly well grant that the quantified sentence ‘I am something he is not’ fails to be committed to anything beyond him and me in *this* sense. There is, again, the broad notion of ontological commitment, according to which a proponent of the property-based view must maintain that the quantified sentence is committed to properties. But, if *this* is the notion at issue, then he will maintain that the unquantified ‘He is kind and I am not’ is likewise committed to properties. The fact that the unquantified sentence doesn’t contain a singular term that refers to a property doesn’t undermine this claim. We don’t, furthermore, run afoul of the principle according to which trivial entailment is ontologically conservative — it will be so on both the broad and the narrow conception.

Second, it bears emphasis that the principle of the ontological conservativeness of trivial entailment that is appealed to in the argument is one that actually poses a problem for the nominalist, who claims that predicates fail to denote properties and that predicative quantifiers fail to quantify over them. After all, doesn’t ‘He is kind and I am not’ trivially entail ‘He has some property I lack’? Many philosophers have thought that inferences of this sort are trivial. Frege (1892), for example, claims that ‘There is at least one square root of 4’ expresses the same thought as ‘The concept *square root of 4* is realized’, and comments that “this will be surprising only to somebody who fails to see that a thought can be split up in many ways, so that now one thing, now another, appears as subject or predicate” (Frege, 1892, p. 188). Or consider Hofweber’s (2005) observation that the inference from ‘Jupiter has four moons’ to ‘The number of moons of Jupiter is four’, and from there to ‘There are numbers’, seem, on the face of it, utterly trivial.²² These are

duce novel commitments might be resisted if the entailment relation in question is just the standard model-theoretic notion of logical consequence. On the standard consequence relation, a tautology is entailed by any sentence. But the tautology ‘The number two is prime or the number two is not prime’ could be thought to carry commitment to the number two. If that is so, any sentence is committed to the number two, or indeed, to any object whatsoever, sine we could equally well substitute a term referring to any object for ‘the number two’. Since I don’t aim to defend the argument, I’m not going to try to offer a precise definition of the relevant notion of trivial entailment.

²²Compare also Shiffer’s (2003) discussion of what he terms “something-from-nothing transformations.”

entailments that no one outside the ontology classroom would bat an eye at.

Far from supporting nominalism, trivial entailments of this sort pose a *problem* for those who would like to maintain an austere conception of the ontology to which our ordinary talk commits us. For suppose we adopt the narrow conception of ontological commitment. Then the fact that ‘He is kind and I am not’ seems to trivially entail ‘He has a property I lack’ is a counterexample to the ontological conservativity of trivial entailment. The nominalist could perhaps save the principle by articulating a notion of trivial entailment on which ‘He is kind and I am not’ no longer trivially entails ‘He has some property I lack’, but still does entail ‘He is something I am not’. That move strikes me as rather suspicious, however — the revised notion seems designed solely to safeguard the nominalist’s preferred view about what we ontologically commit ourselves to.

But even if the nominalist is able to retain the letter of the principle via some such move, a difficulty remains. Hofweber summarizes it nicely:

How could it be that Jupiter has four moons, but the number of moons of Jupiter isn’t four? Or that the number of moons of Jupiter is four, but Jupiter doesn’t have four moons? The truth of one seems to guarantee the truth of the other. Furthermore, the truth conditional equivalence is obvious, maybe even a priori. But on the other hand, the innocent statements and their metaphysically loaded counterparts appear to be about different things. [‘Fido is a dog’] is only about Fido, but [‘Fido has the property of being a dog’] is about both Fido and some other thing, a property.²³

The problem, in other words, is how to explain the fact that sentences which don’t contain singular terms referring to properties trivially entail — in at least *one* fairly intuitive sense — sentences which do contain such terms. The nominalist who claims that predicates fail to denote properties has no easy answer.²⁴ The property-based theorist, by contrast, has a ready reply. Predicates, she claims, don’t refer to properties, but they are nevertheless semantically related to them. The sentence

²³Hofweber (2005, p. 262).

²⁴That isn’t to say that he must be bereft of *any* answer. Hofweber (2005), for example, argues that the metaphysically loaded claims don’t really contain genuine singular terms, but rather involve a kind of focus construction. He then supplements this with a story about the nature of quantification, in order to explain why existential (or: particular) generalization on the apparent singular terms is nevertheless permissible. I am particularly suspicious of the first part of his argument about focus constructions, but I won’t pursue the matter here. My point is just that the nominalist faces an uphill battle.

'He is kind and I am not' contains an expression that is semantically related to a property, and is thus "about" a property (or ontologically committed to a property) in an extended sense. What happens in the entailment is just that we now have sentence containing an expression that *refers* to that property. But the property was, semantically speaking, there all along. Patterns of trivial entailment thus don't pose a problem for the property-based view, but arguably give us evidence in its favor.

Taking a step back, what we have seen is that both the arguments from ontological commitment considered here, and the substitution-based argument we looked at in Chapter 2, fail to appreciate that a proponent of the property-based view need not claim — and is not best understood as claiming — that predicates are just names of properties, or that they refer to properties in just the way certain singular terms do. In the next chapter, we turn to an objection that doesn't trade on this misunderstanding, and that therefore has a better chance of success.

6 Paradox Aplenty?

6.1 Predicative Property Comprehension

Since the property-based view treats predicative quantifiers as quantifying over properties, it is committed to the claim that whenever there is something y is (or isn't, as the case may be), there is some property to witness this fact, that is, some property that y has (or doesn't have). Using ' \triangleleft ' for 'instantiates', the view thus looks to be committed to the following comprehension principle:¹

Predicative Property Comprehension: $\forall X \exists x \forall y (y \triangleleft x \equiv Xy)$

We can understand the principle as saying that there is a property corresponding to anything an object might be, or, allowing ourselves to indulge in talk of concepts, that there is a property corresponding to any concept.

There are, of course, well-known problems with comprehension principles of this sort. In this chapter, I want to consider two arguments that appear to show that Predicative Property Comprehension is untenable, and that the property-based account therefore needs to be abandoned. The first appeals to a generalization of Cantor's Theorem that Rayo (2002) has termed Bernays' Principle. The second is the property-based version of Russell's Paradox.

These objections, unlike those considered in previous chapters, cannot be got around by holding that predicates and predicative variables, though semantically related to properties, nevertheless don't refer to properties in the way that certain

¹I here and in what follows use the label 'Predicative Property Comprehension' not to contrast this principle with an *impredicative* comprehension principle. Rather, the label is meant to highlight the fact that the principle is stated using a predicative, or second-order, quantifier; the relevant contrast is to an approach that appeals to a comprehension *schema*.

singular terms do. The claim that predicates and predicative variables denote properties — even if cashed out in terms of ascription — is enough to saddle us with the above comprehension principle. I should say that arguments in the vicinity of those we’ll be looking at below have been put forward in support of the claim that predicates and predicative quantifiers fail to carry ontological commitments. Rayo and Yablo (2001), for example, offer arguments inspired by Cantor and Russell to further support of their claim that predicative quantifiers lack ontological commitment. I prefer not to frame the issue in these terms, however. If it can be shown that Predicative Property Comprehension must be rejected, that will be enough to mount a formidable objection against the property-based view. Restating the relevant conclusions in terms of ontological commitment would, I think, do more to obscure the objection than to sharpen it. So although the arguments we’ll go on to discuss do bear on questions about ontological commitment — at least on certain precisifications of that notion — I will generally resist the temptation to lapse into that terminology.

6.2 Bernays’ Principle

Cantor’s Theorem states that there is no surjective function (and hence no bijective function) from a set to its power set. Bernays’ Principle is a generalization of this result, and says, roughly, that there is no surjective function from objects to the “pluralities” of those objects. This statement of the principle requires clarification in two respects.

First, singular talk of pluralities is intended to be cashed out in terms of plural talk. For example, the claim that there is a plurality of cheerios in the bowl is just intended to mean that there are some cheerios in the bowl. The cheerios aren’t some further object — a “plurality” — that “collects together” the individual cheerios, they are simply the cheerios.² Dispensing with pluralities, Bernays’ Principle says that there is no function f such that for any things xx there is some object y such that f maps y to the xx ’s.³

²That is the claim, anyhow. The idea that talk about the cheerios doesn’t amount to talk about some further entity besides the individual cheerios is due to Boolos (1984). See Linnebo (2003) for skepticism about the ontological innocence of plural talk. Interestingly, many semanticists follow Link (1983) in taking plural terms to denote things very much like the repudiated pluralities. I will, however, for present purposes grant that plural terms function to multiply denote individual things, rather than pluralities that somehow “collect together” those individual things.

³Following established practice, I will use xx , yy , zz etc. as plural variables, and sometimes write ‘ $y \prec xx$ ’ to say that y is one of the xx ’s.

This restatement of the principle brings us to the need for a second clarification. We can't really appeal to the notion of a *function* which maps an object to the *xx*'s. Functions, after all, yield a unique value for a given argument. But "pluralities" are things like the cheerios in the bowl, and those cheerios aren't a unique value, so to speak. It therefore doesn't make sense to say of a function that it maps something to the cheerios in the bowl. We'll therefore replace talk of functions with talk of "pluralities" of ordered pairs, saying that some ordered pairs map an object *y* onto the *uu*'s iff for every *z*, $\langle y, z \rangle$ is one of those pairs just in case *z* is one of the *uu*'s:⁴

(6.1) **Def.** the *xx*'s map *y* onto the *uu*'s iff $\forall z(\langle y, z \rangle \prec xx \equiv z \prec uu)$

Bernays' Principle can now be stated as follows:⁵

Bernays' Principle: given any ordered pairs, there are some things onto which those ordered pairs map nothing. That is: $\forall xx(\text{Pairs}(xx) \rightarrow \exists uu \neg \exists y(xx \text{ map } y \text{ onto } uu))$, or equivalently: $\neg \exists xx(\text{Pairs}(xx) \wedge \forall uu \exists y(xx \text{ map } y \text{ onto } uu))$.

Since the proof involves a number of steps, it is relegated to an appendix.

The problem for the property-based account of predicative quantification then emerges as follows. As we saw above, the account is committed to the view that given anything an object might be, such as happy, there is some property had by all and only the things that are that, i.e. by all and only the objects that are happy. Let's call the things that are happy the *hh*'s, and a property that is instantiated by just the *hh*'s a *property surrogate* for the *hh*'s. In general

(6.2) **Def.** *x* is a *property surrogate* for the *zz*'s iff $\forall y(y \prec x \equiv y \prec zz)$

The question now arises whether, given any objects (plural), there is some property surrogate for those objects, i.e. whether, given any objects, there is some property instantiated by just those objects. Bernays' Principle shows that there isn't.

Paucity of Property Surrogates: there are some objects which have no property surrogate.

⁴Rayo (2002) gives a different reason for going with ordered pairs instead of functions. As he sees it, the difficulty involved in going with functions is that the domain of the intended function is supposed to consist of all objects there are, and since there is no set of all the objects there are, there is no such thing as the intended function, since functions have set-sized domains. For this consideration to bear weight, it has to be possible to quantify over all objects. I will discuss issues related to absolutely unrestricted quantification below.

⁵Compare Rayo (2002) and Bernays (1942).

Proof: suppose there aren't, that is, suppose that for any objects, there is a property instantiated by just those objects. Let the xx 's be the ordered pairs $\langle x, y \rangle$ such that x is a property and y instantiates x , and let the zz 's be some arbitrary objects. By supposition, there is some property p instantiated by just the zz 's. Now given any y , $\langle p, y \rangle$ is one of the xx 's if y instantiates p , i.e. if y is one of the zz 's. Conversely, for any y , if y is one of the zz 's, then y instantiates p , and so $\langle p, y \rangle$ is one of the xx 's. So for any y , $\langle p, y \rangle$ is one of the xx 's just in case y is one of the zz 's. And this of course just means that the xx 's map p onto the zz 's, and thus that the xx 's map something onto the zz 's. But since the zz 's were arbitrary, we conclude that for any objects, the xx 's map something onto those objects, and thus that there are some ordered pairs which are such that for any objects, those pairs map something onto those objects. But this contradicts Bernays' Principle. Hence, there are some objects such that no property is instantiated by just those objects, i.e. some objects which have no property surrogate. \square

What we've in other words seen is that it is not the case that:

$$(6.3) \quad \forall xx \exists x \forall y (y \prec x \equiv y \prec xx)$$

Now if it is granted that:

$$(6.4) \quad \forall xx \exists X \forall y (Xy \equiv y \prec xx)$$

i.e. that given any things, there is something that just those things are, then we can conclude that it is also not the case that:

$$(6.5) \quad \forall X \exists x \forall y (y \prec x \equiv Xy)$$

i.e. that the principle of Predicative Property Comprehension is false, and that the property-based account is therefore untenable.

6.3 Russell's Paradox

The argument from Bernays' Principle purports to establish that the Principle of Predicative Property Comprehension is false. It does not, however, offer us a particular false instance of the principle. Our second argument, based on Russell's Paradox, remedies this situation. We begin with Predicative Property Comprehension, that is

$$(6.6) \quad \forall X \exists x \forall y (y \lessdot x \equiv Xy)$$

Assuming that it is legitimate to infer $\lceil \dots \neg(y \lessdot y) \dots \rceil$ from $\lceil \forall X (\dots Xy \dots) \rceil$ by predicative $\forall E$, we may infer the following instance:

$$(6.7) \quad \exists x \forall y (y \lessdot x \equiv \neg(y \lessdot y))$$

By $\exists E$, we can now get:

$$(6.8) \quad \forall y (y \lessdot r \equiv \neg(y \lessdot y))$$

from which the following contradiction then results by $\forall E$:

$$(6.9) \quad r \lessdot r \equiv \neg(r \lessdot r)$$

Granted that (6.9) is an instance of (6.8), and (6.8) an instance of (6.7), we conclude that (6.7) is false. Granted further that (6.7) is an instance of Predicative Property Comprehension, we can conclude that this principle is itself false, and that the property-based account is therefore untenable.

In the next two sections, I will consider how a proponent of the property-based view might respond to the argument from Russell's Paradox. We'll then return to the argument from Bernays' Principle after that. There are two kinds of strategies available in the case of Russell's Paradox, corresponding to two crucial steps in the argument. The first option is to try and block the derivation of a contradiction from $\exists x \forall y (y \lessdot x \equiv \neg(y \lessdot y))$. The second option is to somehow restrict predicative $\forall E$, with a view towards blocking the move from Predicative Property Comprehension to $\exists x \forall y (y \lessdot x \equiv \neg(y \lessdot y))$.

6.4 Maneuver 1: Restrictions on Nominal $\forall E$

To block the derivation of a contradiction from $\exists x \forall y (y \lessdot x \equiv \neg(y \lessdot y))$ one could hold that nominal $\forall E$ is restricted in a way that makes it illegitimate to infer the contradiction $r \lessdot r \equiv \neg(r \lessdot r)$ from $\forall y (y \lessdot r \equiv \neg(y \lessdot y))$. One way to motivate this strategy is by way of the thought that it "isn't possible to quantify over absolutely everything." Indeed, someone who is inclined to make this maneuver will take it that the impossibility of quantifying over everything just *is* what Russell's Paradox shows. On this view, the paradox doesn't, as we supposed, demonstrate that there is no property instantiated by all and only those things that fail to instantiate themselves, but rather that this property fails to be within the domain of the universal

quantifier in $\forall y(y \leq r \equiv \neg(y < y))$, and more generally, that, given any quantifier, there will always be at least one object which can't be in the domain of that quantifier on pain of contradiction. Dummett (1973) for example, draws this conclusion, writing that “if we have first succeeded in specifying a totality, then the use of individual variables ranging over that totality has a perfectly clear content, and we may employ it to form expressions for abstract objects: but we have not right to suppose that those objects must fall within the totality we originally specified” (Dummett, 1973, p. 531).

What Russell's Paradox in other words shows, according to the Restricted Quantification View, is that, given a quantifier \forall_1 , it is possible to use that quantifier to specify a property which demonstrably isn't in the domain of that quantifier. Thus we can use \forall_1 to specify

(6.10) The \forall_1 Russell Property: $\iota x[\forall_1 y(y \leq x \equiv \neg(y < y))]$, or: $\lambda_1 y[\neg(y < y)]$

This property, the Restricted Quantificationalist will maintain, is not in the domain of \forall_1 , since the assumption that it is leads to a contradiction.⁶ We may allow that there is a quantifier \forall_2 which does have this property in its domain. But there will then again be a property that we can specify using \forall_2 that isn't in the domain of \forall_2 . And so on.

There are two difficulties with this proposal. First, the proposal comes uncomfortably close to begging the question. Our comprehension principle appears to lead to a contradiction, and we want to be told how to block that contradiction. The proposal is that we avoid the contradiction by denying that the Russell Property falls within the domain of the relevant universal quantifier. If we then ask what it is that supports this claim, all we are told is that its denial leads to a contradiction. One might like to be given a more independent reason than this to accept the relevant domain restriction, however.⁷ Second, the view seems to be self-undermining. The thesis being put forward — that given any quantifier, there is something that is not in its domain, or something that it fails to quantify over — itself involves a quantifier. If we apply the thesis to itself, it seems to commit us to the claim that there is

⁶That is: the variable bound by \forall_1 does not range over all the items that the variable bound by the definite description operator ' ι ' ranges over. Notice that this argument against absolutely unrestricted quantification does not rely on what Cartwright (1994) has termed the All in One Principle, viz. the principle that domains of quantification must be sets, or set like objects.

⁷Notice that the claim with which we are here taking issue is not just that quantifiers always come with a domain restriction. We could accept *this* and still wonder what principled grounds there are, besides the contradiction itself, for thinking that the Russell property in particular always falls outside the restricted domain.

something not in the domain of this very quantifier, or that there is something this very quantifier fails to quantify over. On the face of it, that can't be right.⁸

The Restricted Quantification View in our case amounts to the idea that we need to distinguish the domain of the nominal existential quantifier in our comprehension principle $\forall X \exists x \forall y (y \prec x \equiv Xy)$ from the domain of the subsequent nominal universal quantifier. A variant of the view puts an additional ontological spin on this idea. According to the Type Theoretic View, reality comes stratified into a hierarchy of levels. There are particulars, properties of particulars, properties of properties of particulars, and so on, but nothing that belongs to more than one of these levels, or types. Correlatively, there are quantifiers that quantify over particulars, quantifiers that quantify over properties of particulars, quantifiers that quantify over properties of properties of particulars, and so on, but no quantifier that straddles different levels of the hierarchy and simultaneously quantifies over things belonging to different types.

The nominal existential quantifier in Predicative Property Comprehension accordingly needs to be viewed as quantifying over items belonging to the next "higher" type from those quantified over by the subsequent nominal universal quantifier. Predicative Property Comprehension should, in other words, be more explicitly written as follows;

$$(6.11) \quad \forall X \exists_{n+1} x \forall_n y (y \prec x \equiv Xy)$$

with \exists_{n+1} a quantifier over items of type $n+1$ and \forall_n a quantifier over items of the lower type n . We would again be barred from deriving a contradiction because a variable bound by \forall_n is prohibited from taking the same value as the variable bound by \exists_{n+1} .

The Type Theorist's stratified view of reality might seem to give her an advantage over the Restricted Quantification View. According to the Restricted Quantificationalist, there are particulars and properties, but it is left open that properties may be instantiated by both particulars and by properties. Both particulars and properties, furthermore, belong to an all-inclusive category — that of *objects*. The Restricted Quantificationalist accordingly allows that we may have quantifiers that quantify over objects quite generally, that is, quantifiers which straddle the divide between properties and particulars. What isn't possible, according to him, is just

⁸Objections of this sort are mentioned by e.g. Cartwright (1994) and McGee (2000). The objection is developed in some detail by Williamson (2003) and Linnebo (2006). For a defense of the Restricted Quantification View, see e.g. Glanzberg (2004) and Rayo (2010). Rayo and Uzquiano (2006) gives a good overview of the issue of absolutely unrestricted quantification.

for there to be a quantifier that quantifies over absolutely all objects at once — or, more specifically, for there to be a quantifier that quantifies over a domain that includes the Russell property that is specifiable on that domain.

The Type Theoretic View, by contrast, abjures this all-inclusive notion of ‘object’, and denies that there are quantifiers which simultaneously quantify over items belonging to different types. This move may seem to take some of the sting out of the second objection I mentioned above against the Restricted Quantification View, since on the Type Theoretic View, it is perfectly possible to quantify over everything, if by ‘everything’ we mean all particulars. It is also possible to quantify over all properties of a given type. The only thing that is not possible is to quantify over things of different types at the same time, so to speak. But that doesn’t mean that it isn’t possible to quantify over everything, in any legitimate sense of ‘everything’: the only notion of ‘everything’ on which it isn’t possible to quantify over everything is a notion that attempts, *per impossible*, to straddle the divide between the different levels that structure reality. And that, the Type Theorist will maintain, is just a notion we need to learn to live without. The Type Theorist’s stratified view of reality may also give her a better response to the first objection. We aren’t singling out the Russell Property for special exclusion from the domain of the innermost universal quantifier in our comprehension principle — *no* property specifiable with respect to that domain falls within the domain of that quantifier.

The Type Theorist also faces certain difficulties of her own, however. Compare the Type Theorist’s proposal to a certain kind of Fregean View. The Fregean also thinks that reality comes in the form of a stratified hierarchy, consisting of a base level that contains objects and higher levels containing “concepts” of various types. The Fregean puts a further spin on the idea by tethering these ontological notions to different types of linguistic expressions: first level concepts, according to the Fregean, are only capable of being denoted by predicates, while objects are only capable of being denoted by nominal expressions. The Fregean’s version of the comprehension principle, call it Predicative Concept Comprehension, will accordingly run as follows:

$$(6.12) \quad \forall X \exists Y \forall y (Yy \equiv Xy)$$

This principle is of course trivial, since it follows from the theorem $\forall X \forall y (Xy \equiv Xy)$. Like the Type Theorist’s principle of Predicative Property Comprehension, the Fregean principle of Predicative Concept Comprehension also manages to block Russell’s Paradox, since it too distinguishes the domain of the particular quantifier

$\exists X$ in (6.12) from the domain of the subsequent universal quantifier $\forall y$.⁹ The difference is that whereas the Fregean construes the relevant particular quantifier as a predicative quantifier, the Type Theorist construes it as a nominal quantifier.

This contrast between the Fregean and the Type Theorist raises a worry about the Type Theoretic View, however. Like the Type Theorist, the Fregean avoids the second objection faced by the Restricted Quantification View, for he too will resist the claim that it is, in any legitimate sense, impossible to quantify over everything there is. But the Fregean seems to have a leg up on the Type Theorist when it comes to this point. What isn't possible, according to the Fregean, is to simultaneously quantify over both objects and concepts. But for him this is just another way of saying that it isn't possible to have a quantifier which is simultaneously nominal and predicative. The Type Theorist's claim that no quantifier straddles the ontological hierarchy is more mysterious by comparison. For according to her, the quantifiers that go with the various levels in the hierarchy are one and all nominal. This makes it harder to see why we shouldn't have a single, nominal quantifier quantifying over both particulars and properties of various types. Put differently: since the Fregean ties his notion of concept and object so closely to the distinction between nominal and predicative expressions, it is to be expected that his ontological hierarchy will be reflected in the structure of language; since the Type Theorist's distinction between particulars and the various types of properties isn't in the same way connected to the structure of language, it is comparatively more mysterious why quantifier domain restrictions should precisely match his ontological hierarchy.¹⁰

Second, the Type Theorist arguably offends against her own claim that quantification across types is impossible. For in the course of presenting her theory, she will want to say, for example, that there are many different types of things, or that nothing belongs to more than one type. But in making these claims, she seems to be doing just what she officially abjures, namely invoking an all-inclusive notion of "thing" and using it to generalize across types.¹¹ So the Type Theorist could

⁹The Fregean of course does still face the threat of a contradiction if he augments his view with the further claim that concepts have object surrogates (e.g. value ranges), as Frege himself did.

¹⁰That being said, the Fregean also faces difficulties of his own, as we saw in Chapter 2. A proponent of the property-based account won't, in any case, want to avail himself of the Fregean alternative to the Type Theoretic View, since he wants to maintain that the things predicates denote (i.e. properties) are also capable of being denoted by nominal expressions, and quantified over by nominal quantifiers. He therefore can't identify his properties with the Fregean's concepts.

¹¹Linnebo (2006) raises a similar complaint against the Type Theorist's position, though from a metalinguistic perspective. Thus he e.g. notes that since the Type Theorist *qua* semanticist will

be charged with putting forward a self undermining thesis much like the Restricted Quantificationalist.

A third difficulty with the Type Theoretic View is that the principle of Predicative Property Comprehension the Type Theorist puts forward isn't obviously acceptable if it is to function as part of an account of natural language predicative quantification. For if there are predicates that are satisfied by both properties and particulars, then such predicate won't, according to the Type Theorist, correspond to a property, because there are, on her view, no properties which are instantiated by both properties and particulars. That natural languages fail to contain such predicates is far from obvious, however. The predicate 'abstract', for example, might be satisfied by both particulars (e.g. numbers, symphonies, and plays) as well as properties. The Type Theorist will, it seems, therefore have to claim that there is a hidden ambiguity in such predicates. In a sentence like 'Shakespeare's *Macbeth* is abstract', we are dealing with a predicate 'abstract₁' denoting a first level property, whereas in 'The property of having murdered someone is abstract', we are dealing with a predicate 'abstract₂' denoting a second level property.

6.5 Maneuver 2: Restrictions on Predicative $\forall E$

The second kind of maneuver available to a defender of the property-based account of predicative quantification is to restrict predicative $\forall E$ with a view towards blocking the move from Predicative Property Comprehension to $\exists x \forall y (y \triangleleft x \equiv \neg(y \triangleleft y))$. A completely unrestricted rule of predicative $\forall E$ would allow us to move from $\lceil \forall X (\Phi(X)) \rceil$ to any formula that results from the latter by (i) erasing $\forall X$, (ii) picking any formula ψ with a free nominal variable β , and (iii) replacing each occurrence of X in $\Phi(X)$ with $\psi[\alpha/\beta]$, where β is again the free variable in ψ , α is whatever nominal constant or variable the relevant occurrence of X occurred in combination with, and $\psi[\alpha/\beta]$ is the result of replacing each occurrence of β in ψ with α . To restrict predicative $\forall E$ means to place certain restrictions on which formulas ψ may, in the manner specified, be substituted for occurrences of X . The restriction we want is one that will disallow $\neg(y \triangleleft y)$ as a choice for ψ .

Let me begin by addressing a rather general worry about this kind of move. Any restriction we impose on predicative $\forall E$ will commit us to the view that certain

want to assign properties as the semantic values of predicates and particulars as the semantic values of expressions like 'Oscar', the Type Theorist is claiming that there are different types of semantic values. The claim that there are different types of semantic values, however, "involves generalization across types" (Linnebo, 2006, p. 155).

predicates, because they are not admissible choices for ψ in Predicative Property Comprehension, fail to correspond to, or denote, properties. In particular, any restriction on predicative $\forall E$ that lets us avoid Russell's Paradox will have as a consequence that the predicate ' $\neg(y < y)$ ', or 'non-self-instantiating', fails to correspond to a property. And yet many sentences containing this predicate seem perfectly meaningful, even true. It for example seems quite true that the property of being wise is non-self-instantiating. Similarly, it seems intuitively legitimate to engage in particular predicative generalization with respect to this predicate, and conclude that the property of being wise is something (namely: non-self-instantiating). But a restriction of the proposed sort will have us say that this predicate does not denote a property, and that there is no property to witness the truth of this predicative generalization. This raises a worry. For doesn't the property-based view propose that the meaningfulness of a sentence containing a given predicate depends on there being a property to which that predicate corresponds, and that the truth of a predicatively quantified sentences depends on there being a witnessing property?

Though something certainly needs to be said in response, I don't think that this general worry shows that the property-based view simply cannot accept *any* restrictions on predicative $\forall E$. Consider the case of empty names. Most theories about the semantics of names have it that names function to refer to individual objects. The existence of empty names like 'Pegasus' or 'Vulcan' is not generally thought to show that this view is untenable.¹² MacBride (2006) puts the thought as follows:

[Russell's Paradox] may lead one to question whether it is the role of predicates to refer to all. But the fact that *some* predicates are determined by logic to be incapable of referring hardly settles that *no* predicates refer. After all, we do not take the fact that some names do not refer to establish that no names refer. Indeed the possibility that a predicate might fail to pick out a property — that some predicates should be empty — is just what should be expected if it is the ordinary function of predicates, at least in more favourable conditions, to refer.

Reference, in other words, involves success and can, as such, also fail. To conclude that we have to abandon the view that it is, in general, the semantic function of

¹²Not everyone will accept that such names are empty, in the sense of failing to refer. Meinongians, for example, will say that such names refer to nonexistent objects. They will characterize "empty" names not as names that fail to refer, but as names that refer to such nonexistent objects. For a discussion of this and other issues surrounding empty names, see Sawyer (2012).

names to refer simply because certain names fail to do so seems like an overreaction. We might instead set empty names aside for separate treatment — perhaps along Russellian lines — while retaining the usual view about the semantic function of those names that do succeed in referring. We might also think that it is intuitively legitimate to generalize with respect to empty names. Hofweber (2000), for example, regards the transition from ‘Santa is a non-existent object’ to ‘There is a non-existent object (namely Santa)’ as a “trivial inference.” He doesn’t, however, conclude from this that we ought to abandon the ordinary treatment of nominal quantification, but rather that we need to set such quantifiers aside for special treatment, along roughly substitutional lines.

In the same vein, we might think it an overreaction to abandon the property-based view simply on the grounds that certain predicates don’t correspond to properties. As in the case of empty names, we might instead set problematic predicates like ‘non-self-instantiating’ aside for special treatment — perhaps along Ockhamist lines — and subject predicative generalizations with respect to those predicates to a similarly non-standard treatment — perhaps along Ockhamist or substitutional lines.

That having been said, there are, I think, some desiderata that we should keep in mind when considering proposals that restrict predicative $\forall E$. First, we would like the relevant restriction to be suitably narrow in scope. The restriction must of course exclude ‘ $\neg(y < y)$ ’, but we would like it to allow “ordinary” natural language predicates like ‘happy’ and ‘wise’ as choices for ψ . After all, the property-based view is being put forward as an account of the function of predicates and predicative quantifiers in natural language, and so we would like it to apply to most cases of predication and predicative quantification that we encounter in natural language. We wouldn’t, for example, want to allow only those predicates that “limn the fundamental structure of reality” as acceptable choices for ψ , since such a restriction would exclude most, perhaps all, natural language predicates. On the other hand, we would also ideally like a relatively general and principled story about which predicates to exclude. We wouldn’t, for example, want to exclude ‘ $\neg(y < y)$ ’ as a choice for ψ *simply* on the grounds that admitting it leads to a contradiction — a restriction phrased directly in terms of a predicate’s liability to produce a contradiction comes uncomfortably close to just begging the question against the objection to the property-based view that we’re here considering. We thus have two competing desiderata: on the one hand, we want a restriction that is at once principled and wide enough in scope to exclude ‘ $\neg(y < y)$ ’, but on the other hand, the net it casts should not be so wide as to exclude most natural language predicates. Let us now turn to some concrete proposals.

One way to pursue the strategy of restricting predicative $\forall E$ would be to implement a version of Russell's prohibition against impredicative property specifications. Applied to our principle of Predicative Property Comprehension:

$$(6.13) \quad \forall X \exists x \forall y (y \prec x \equiv Xy)$$

the thought would be that we should not allow any ψ that contains a variable which can take the property x being specified as its value. This will rule out $\neg(y \prec y)$ if the property x that we are specifying is admitted as a possible value of y . But since any choice for ψ will (upon substitution) contain the variable y , the restriction essentially amounts to a version of the first maneuver, discussed in the last section, since it would require us to construe the nominal universal quantifier in Predicative Property Comprehension as having a domain that is distinct from, or narrower than, that of the preceding nominal existential quantifier. We might, for instance, again go type theoretic, and claim that the nominal existential quantifier quantifies over entities of type $n + 1$, while the subsequent nominal universal quantifier is to be construed as ranging over entities of type n . The restriction then tells us that ψ may contain a variable ranging over entities of type n , but not one that ranges over entities of type $n + 1$. As we saw in the previous section, however, this kind of type theoretic strategy faces certain difficulties that make it unattractive.

Another way to restrict predicative $\forall E$ would be to adapt a suggestion due to Linnebo (2006). Linnebo proposes that we only allow a "condition" to individuate a property if that condition is "well founded." A condition is well founded if it fails to *distinguish* items that have not yet been individuated, where a condition fails to distinguish not-yet-individuated items just in case for any not-yet-individuated items x and y , either the condition is true of both x and y or false of both x and y . We could adapt the suggestion to the present case by disallowing a choice of ψ in predicative $\forall E$ if the relevant ψ distinguishes among properties. This proposal would, for instance, rule out using 'Oscar \prec y ' as our ψ in predicative $\forall E$, since this predicate will be true of some properties but not others. The predicate ' $\neg(y \prec y)$ ' is plausibly also ruled out, since it will distinguish between properties that instantiate themselves (granted that there are such things) and ones that don't.

The proposal is again not obviously acceptable to a proponent of the the property-based view, however. As mentioned earlier, we would generally like to allow predicative expression of natural language to function as our ψ in predicative $\forall E$. But it is not obvious that natural language predicates will in general fail to distinguish among properties. Oscar might, for example, have an interest in the property of being wise, but not in the property of being cowardly. So 'of interest

to Oscar' will distinguish among properties, meaning that the relevant restriction would disallow it as a choice for ψ in predicative $\forall E$. The property-based view then won't be applicable to this predicate, nor to predicative generalizations involving it — it won't, that is, account for the apparent truth of the claim that the property of being wise is something that the property of being cowardly is not (namely, of interest to Oscar). The concern, then, is that our adaptation of Linnebo's proposal threatens to cast the net too widely, potentially ruling out many seemingly "ordinary" predicates, meaning that the property-based view would have a more restricted scope of application than one might like.¹³

Let me finally explore a third way in which we might seek to restrict predicative $\forall E$ so as to avoid the contradiction. The restriction I have in mind is motivated by the observation that instantiation has been thought to be implicated in other problems, besides Russell's Paradox. One troubling feature of instantiation, already noted in Chapter 1, is that it gives rise to Bradley's Regress.¹⁴ Suppose Oscar loves Alice. We now ask what, besides the mere existence of Oscar, Alice, and the relation of loving, is required for this to be the case. One wants to say that Oscar has to *bear* the relation of loving to Alice, or that this relation has to be *instantiated* by Oscar and Alice (in that order). And so we might hold that, quite generally:

Relational Grounding: for x to R y is for $\langle x, y \rangle$ to *instantiate* the relation of *Ring*.

The problem is clear. We have said that for Oscar to love Alice is for $\langle \text{Oscar}, \text{Alice} \rangle$ to instantiate the relation of loving. But if we now apply Relational Grounding again, we have to conclude that for $\langle \text{Oscar}, \text{Alice} \rangle$ to instantiate the relation of loving is for $\langle \langle \text{Oscar}, \text{Alice} \rangle, \text{the relation of loving} \rangle$ to instantiate the relation of instantiation. And so on. Since the grounding never ends, it looks like the existence of relations leaves all facts ungrounded.

One response to this regress is to deny that instantiation is a relation. We might say that the relation of loving is a thing "in the world" about which one can ask how it relates to other things, but that instantiation is not something in the world about which one can ask how it relates to other things. The job of instantiation is to relate things, but there is no question of how it itself relates to things. Really, we

¹³Linnebo doesn't face this issue because he doesn't concern himself with natural language, but with the language of ZFCU set theory, and is able to provide guarantees that no condition specifiable in that language distinguishes among properties.

¹⁴Bradley discusses the regress in chapters 2 and 3 of his (1893). I won't address the question of whether the regress as I present it below is felicitous to the original.

shouldn't even speak of instantiation in this way. One can use the verb 'instantiate' to say that Oscar and Alice instantiate the relation of loving, but we should resist the temptation to say that there is such a thing as instantiation, since that is liable to raise the question of what, besides its existence, is required for Oscar and Alice to instantiate the relation of loving.¹⁵

This proposal amounts to the claim that while it is true that there is some relation which any pair $\langle y, z \rangle$ instantiates just in case y loves z , i.e. that:

$$(6.14) \exists x \forall y \forall z (\langle y, z \rangle \triangleleft x \equiv y \text{ loves } z)$$

it is not similarly the case that there is some relation which any pair $\langle y, z \rangle$ instantiates just in case y instantiates z , i.e. that it is not the case that:

$$(6.15) \exists x \forall y \forall z (\langle y, z \rangle \triangleleft x \equiv y \triangleleft z)$$

and that we therefore can't apply Relational Grounding when the R in question is 'instantiates'. Sentences like (6.14) and (6.15) are instances of what we might call Dyadic Relation Comprehension. So one way to resist Bradley's Regress is to restrict which instances of Dyadic Relation Comprehension to accept, and in particular, to claim that we should not accept the instance that is obtained by letting the relational expression on the right-hand side of the biconditional be ' \triangleleft '.

A second problem involving 'instantiates' emerges if we turn our attention back to properties. One might claim that for Oscar to love Alice isn't for Oscar and Alice (in that order) to instantiate the *relation* of loving, but for Oscar to instantiate the *property* of loving Alice. More generally, we might claim that:

Propertied Grounding: for x to G (or: to be F , or: to G y) is for x to instantiate the property of G ing (or: the property of being F , or: the property of G ing y).

A similar problem now arises. For if we apply Propertied Grounding again, we will conclude that for Oscar to instantiate the property of loving Alice is for Oscar to instantiate the property of instantiating the property of loving Alice, and so on.

¹⁵The thought that regresses of this sort show that instantiation is not a genuine relation crops up frequently in the literature. See e.g. Ryle (1939), Strawson (1959, Ch. 5), Bergmann (1960), Sellars (1962), Cleve (1994), Armstrong (1997, Ch. 8), and Hossack (2007, Ch. 2). Armstrong and Hossack put a twist on the idea, holding that x instantiates y just in case there is a state of affairs that "combines", or is the instantiation of, x an y . Their proposal bears a resemblance to the thought canvassed here, in that they deny that combination or instantiation is a relation that figures as a constituent of states of affairs in the way that genuine relations do.

Similarly, for Oscar to be happy is for him to instantiate the property of being happy, and for him to instantiate the property of being happy is for him to instantiate the property of instantiating the property of being happy, and so on. Again, we seem faced with the threat that all facts remain ungrounded. Since this property-theoretic regress is suggested by Teichmann (1989, p. 157), I'll call it Teichmann's Regress to distinguish it from the relation-theoretic Bradley's Regress.

The solution here seems clear: the property of instantiating the property of loving Alice just *is* the property of loving Alice. Similarly, the property of instantiating the the property of being happy just is the property of being happy. And in general

$$(6.16) \quad \forall X (\lambda x [Xx] = \lambda y [y \triangleleft \lambda x. [Xx]] = \lambda z [z \triangleleft \lambda y [y \triangleleft \lambda x. [Xx]]] = \dots \text{ etc.})$$

Teichmann's Regress therefore isn't vicious. It appears vicious if we think that for Oscar to instantiate the property of instantiating the property of loving Alice, something "more" is needed than for him to instantiate the property of loving Alice. But since the relevant properties are one and the same, this isn't the case: if Oscar instantiates the property of loving Alice, or the property of being happy, he *eo ipso* instantiates the property of instantiating the property of loving Alice, or the property of instantiating the property of being happy.

What I am here primarily interested in is not the two regresses, but a view that they suggest about the role played by 'instantiates' in our theorizing about properties. The view is the following. Predicative and relational expressions correspond to properties and relations, respectively. The expression 'instantiates' gives us a way to specify those properties and relations using the relevant predicative and relational expressions. The property corresponding to the predicate 'happy', for example, can be specified as the x which any y *instantiates* just in case y is *happy*. But 'instantiates' does not, in addition, have the role of being an expression that itself produces such relational and predicative expressions — expressions together with which 'instantiates' can then be used to specify properties and relations.

Thus Bradley's Regress suggests that although we can use 'instantiates' to specify the relation corresponding to 'loves', we cannot similarly use 'instantiates' to specify a relation corresponding to the expression 'instantiates': there is no relation r which any $\langle x, y \rangle$ instantiates just in case x instantiates y . Similarly, Teichmann's Regress suggests that although we can use 'instantiates' to specify the property corresponding to 'happy', if we try to specify the property that corresponds to a predicate that itself contains 'instantiates', we may end up with a "degenerate" property specification — a specification that can be replaced by one involving a predicate that doesn't contain 'instantiates'. For example, while we can speak about the property

which anything instantiates just in case it *instantiates the property of being happy*, we can just as well speak of the property which anything instantiates just in case it is *happy*.

Let's now move from the formal into the material mode, and reformulate the view by substituting talk of predicative expressions with talk of things an object might be, or, for expository purposes, "concepts." Every concept, we will say, corresponds to a property. The notion of instantiation gives us a way to specify the property that corresponds to a given concept — the property surrogate of that concept. But instantiation does not, in addition, have the role of specifying concepts themselves. Concepts should be specifiable without any appeal to instantiation. When it comes to restricting predicative $\forall E$, the idea will be implemented by requiring that our choice for ψ not contain any occurrence of ' \prec '.

I'm not suggesting that our two regresses establish this proposal. But they do lay it close to hand. And of course, if we accept it, it lets us block ' $\neg(y \prec y)$ ' as a choice for ψ in predicative $\forall E$, thus giving us the means to avoid the argument from Russell's Paradox we've been considering. Once again, however, difficulties remain. Suppose we allow ourselves, as we have been, to use λ -expressions as terms for properties. If we now admit ' $\exists Y(y = \lambda z[Yz] \wedge \neg Yy)$ ' as a choice of for ψ , we get the following instance of Predicative Property Comprehension:

$$(6.17) \quad \exists x \forall y (y \prec x \equiv \exists Y (y = \lambda z [Yz] \wedge \neg Yy))$$

asserting the existence of a property corresponding to the concept $\exists Y (y = \lambda z [Yz] \wedge \neg Yy)$. Using λ -notation, the relevant property is $\lambda v [\exists Y (v = \lambda z [Yz] \wedge \neg Yv)]$. However, if we now ask whether this property falls under the concept to which it corresponds, that is, if we consider the following disjunction (abbreviating ' $\lambda v [\exists Y (v = \lambda z [Yz] \wedge \neg Yv)]$ ' as ' $\lambda v [Rv]$ ' for the sake of readability):

$$(6.18) \quad \begin{aligned} & \exists Y (\lambda v [Rv] = \lambda z [Yz] \wedge \neg Y (\lambda v [Rv])) \\ & \vee \\ & \neg \exists Y (\lambda v [Rv] = \lambda z [Yz] \wedge \neg Y (\lambda v [Rv])) \end{aligned}$$

then a contradiction can be shown to result from either disjunct.¹⁶

¹⁶To get the contradiction, either of the following principle governing λ -terms suffice:

- $\forall X \forall Y (\lambda z [Xz] = \lambda z [Yz] \rightarrow \forall x (Xx \equiv Yx))$
- $\forall X \forall x (x \prec \lambda z [Xz] \equiv Xx)$

In thinking about this version of Russell's Paradox, as well as other matters discussed in this chapter, I have benefited from the work of Burgess (2005), Klement (2010), and Zalta (2012).

We now face a dilemma. On the one hand, we could expand our restriction on predicative $\forall E$ so as to block choices of ψ which, like $\exists Y(y = \lambda z[Yz] \wedge \neg Yy)$, contain a λ -term.¹⁷ ¹⁸ But this move again looks like it will rule out more than we might like, since it would prohibit any predicate that contains such a property-denoting term as a choice for ψ . Oscar might, for example, be particularly interested in the property of being courageous. It then seems intuitively legitimate to conclude that there is something Oscar is (namely: interested in the property of being courageous). But the proposed restriction would prevent us from countenancing a property that corresponds to this predicate, and that witnesses the truth of the predicatively quantified claim. And so the property-based view will again turn out to have a more limited scope of application than one might ideally like. If, on the other hand, we do want to allow for a property to correspond to the predicate ‘interested in the property of being courageous’, then it is unclear how we are still going to avoid admitting $\exists Y(y = \lambda z[Yz] \wedge \neg Yy)$ as a choice for ψ .

We haven’t, then, found a restriction on predicative $\forall E$ that is unproblematic from the point of view of the property-based account: both the Linnebo-inspired restriction, and the regress-inspired restriction (or: a version of it that also prohibits property-denoting terms from occurring in ψ) rule out more choices of ψ than one might ideally like. This isn’t to say that the strategy of restricting predicative $\forall E$ is dead in the water. As we’ve noted, any restriction will require us to say that *some* predicates fail to correspond to properties, and so aren’t subject to the property-based account. The objections I’ve raised therefore aren’t decisive: at some point we will have to let theory, rather than intuition, be our guide when it comes to delineating the scope of application of the property-based account. But I can’t claim to have established that either of our two proposals is the one that ought, ultimately, to guide us in this regard.

¹⁷It could be argued that the restriction proposed above already blocks such choices for ψ , on the grounds that a λ -term $\lambda x[Xx]$ is just notational shorthand for $\iota x[\forall y(y < x \equiv Xx)]$, and thus implicitly involves an occurrence of ‘<’. This conclusion isn’t forced on us, however, since we could take λ -terms to be primitive. Consider that in natural language we don’t generally speak of the property which anything instantiates just in case it is happy, but just of the property of being happy. We might want to use λ -terms as primitive formal counterparts to locutions of the latter sort.

¹⁸I here ignore the possibility of blocking this version of Russell’s Paradox disallowing predicates that contain a free variable which can take the very property we are specifying as its value, since, as mentioned in relation to Russell’s prohibition on impredicative property specifications, this kind of move amounts to the Restricted Quantification View (or its type-theoretic variant) already discussed in the previous section.

6.6 Back to Bernays' Principle

Let us turn now to the argument from Bernays' Principle. At a suitable level of abstraction, and indulging in talk of pluralities, what Bernays' Principle says is that given any domain of objects, there are pluralities of those objects that don't correspond to any object in that domain. However, granted that properties are objects of a certain sort, the fact that not every plurality of objects from our domain corresponds to an object in that domain means that not every plurality of objects from our domain corresponds to a property in that domain. If, finally, we further accept that every plurality of objects from a given domain corresponds to a concept, we will have to conclude that not every concept corresponds to a property in that domain.

As this way of stating the argument makes plain, however, versions of the Restricted Quantification View that we looked at in connection to Russell's Paradox would also offer a way to resist the argument from Bernays' Principle. We might accept that not every plurality of objects from a given domain corresponds to an object *in that domain*. But we could still hold on to the idea that every plurality of objects from a domain has a property surrogate — what Bernays' Principle shows is just that at least some of those property surrogates aren't in our original domain.¹⁹ Again, the proposal could also be recast in type theoretic terms. We could claim that there are domains of objects, and domains of properties of those objects, but that no domain contains both. Or more generally: there are domains of things of type n , and domains of things of type $n + 1$, but no domains (and no pluralities) that straddle the type theoretic hierarchy. What Bernays' Principle shows us, then, is that given all the things of type n , there are pluralities of things of type n that don't correspond to any thing of type n . But this, we would maintain, is alright: the property surrogate for any plurality of things of type n won't be among things of type n , but rather among things of type $n + 1$.

As we've seen, however, there are problems associated with the Restricted Quantification View that a property-based theorist may wish to avoid. Suppose, then, that it is possible to quantify over absolute everything "all at once," as the argument from Bernays' Principle implicitly assumes. We will then have to grant that not every plurality has a property surrogate. As we've seen, this conclusion undermines the property based view if we also accept:

¹⁹Domains needn't necessarily be construed as set-like entities here. Talk of domains could be construed as talk of the *objects* (plural) a given quantifier quantifies over. Bernays' principle tells us that given any objects, there are pluralities of those objects that don't correspond to any of those objects. The Restricted Quantification View then says that this only shows that given any objects we might quantify over, some properties fail to figure among those objects.

$$(6.4) \quad \forall xx \exists X \forall y (y \prec xx \equiv Xy)$$

that is, also accept that every plurality corresponds to a concept. But does a property-based theorist need to accept this?

Here, the strategy of restricting predicative $\forall E$ might give us a way out. Consider that, whatever the precise nature of the restriction, it will have to exclude the predicate ‘ $\neg(y \prec y)$ ’ as a choice for ψ in Predicative Property Comprehension, so as to avoid commitment to a corresponding property. Someone who pursues this strategy will therefore want to deny that there is a concept that corresponds to this predicate:

$$(6.19) \quad \neg \exists X \forall y (Xy \equiv \neg(y \prec y))$$

since, if there were, we would have to allow ‘ $\neg(y \prec y)$ ’ as a choice for ψ , and incur commitment to the problematic property. But the predicate presumably does, nevertheless, correspond to a plurality: even if there is no concept that just the non-self-instantiating things fall under, and no property had by just those things, the non-self-instantiating things themselves surely do exist. We will therefore still grant:

$$(6.20) \quad \exists xx \forall y (y \prec xx \equiv \neg(y \prec y))$$

So there is a plurality, namely the non-self-instantiating things, that fails to correspond to a concept. A property-based theorist who restricts predicative $\forall E$ will therefore want to reject (6.4).

That there is a mismatch in one direction between concepts and pluralities is something we already touched on in Chapter 1. We there saw that, though we can accept that there are concepts that nothing, as a matter of fact, falls under and properties nothing instantiates, there cannot be “empty pluralities”: the F s only exist if there is at least one thing that is F . Thus, not every concept corresponds to a plurality — only “non-empty” concepts do. The proposal here on the table has it that there is also a mismatch in the other direction: not only are there concepts (and properties) to which no plurality corresponds, there are also pluralities to which no concept (or property) corresponds. It might be objected that (6.4) — the claim that every plurality corresponds to a concept — follows from the trivial truth:

$$(6.21) \quad \forall xx \forall y (y \prec xx \equiv y \prec xx)$$

But this is so only if we grant that it is generally legitimate engage in predicative $\exists I$ with respect to plurals, i.e. that it is generally legitimate to proceed from $\lceil \Phi(y \prec xx) \rceil$ to $\lceil \exists X \Phi(Xy) \rceil$. And of course this is precisely what is at issue: if we deny that every plurality corresponds to a concept, then we will reject inferences of this sort.

Again, however, it is not clear that a proponent of the property-based view can avail herself of this response to the objection. For, as we saw in the previous section, it isn't clear exactly how to formulate a principled criterion for admissible and inadmissible choices of ψ that avoids Russell's Paradox and yet still allows a sufficiently broad range of natural-language predicates to determine (concepts and thus) properties.

6.7 Ockhamism

The arguments from Russell's Paradox and Bernays' Principle constitute formidable objections to the property-based view. More would, I think, have to be said to show that the view *cannot* overcome these objections, and therefore *must* be abandoned — the strategy of restricting predicative $\forall E$, in particular, strikes me as a promising one for the property-based theorist to pursue. But neither have I shown that there are unproblematic ways to overcome them. The question of the ultimate acceptability of the property-based view is therefore one I'll have to leave open, pending a satisfactory response to the two objections we've here considered.

As we saw in Chapter 1, the Ockhamist Account provides us with an alternative semantic proposal. It might therefore be suggested that the difficulties the property-based view encounters with regard to Russell's Paradox and Bernays' Principle should move us to adopt the Ockhamist Account instead. In closing, I want to put forward some considerations that may serve to temper the pull of this conclusion.

It might seem that, since the Ockhamist does not appeal to properties in the course of giving a semantics for predicative quantification, she is committed to nothing more than the apparently innocuous principle I earlier called Predicative Concept Comprehension:

$$(6.12) \quad \forall X \exists Y \forall y (Yy \equiv Xy)$$

That isn't quite right, however. Recall that the Ockhamist treats predicates as (at least potentially) applying to multiple objects. When it comes to giving a semantics for predicative quantifiers, the Ockhamist then appeals to assignment relations that (at least potentially) relate predicative variables to multiple objects. The Ockhamist

thus looks to be committed to the claim that given any concept and predicative variable Υ , there exists some assignment relation h which relates Υ to just the things falling under the relevant concept, that is:

$$(6.22) \quad \forall X \forall \Upsilon \exists h \forall y (\langle \Upsilon, y \rangle \in h \equiv Xy)$$

But, drawing on a paradox in the style of Russell due to Williamson (2003), we can now show that this principle leads to an inconsistency as well.²⁰

We begin with the following instance of (6.22):

$$(6.23) \quad \forall \Upsilon \exists h \forall y (\langle \Upsilon, y \rangle \in h \equiv \neg(\langle 'G', y \rangle \in y))$$

and instantiate $\forall \Upsilon$ to ' G ' to get:

$$(6.24) \quad \exists h \forall y (\langle 'G', y \rangle \in h \equiv \neg(\langle 'G', y \rangle \in y))$$

The problem is clear: if the universal quantifier ' $\forall y$ ' can be instantiated to the very assignment relation whose existence (6.24) asserts, we arrive at the following contradiction:

$$(6.25) \quad \langle 'G', r \rangle \in r \equiv \neg(\langle 'G', r \rangle \in r)$$

The Ockhamist must therefore also make some further maneuvers once we turn to the threat posed by paradoxes in the style of Russell's.

That having been said, there are, I think, ways for the Ockhamist to avoid this particular problem. One option would be to replace first-order appeal to assignment relations with second-order quantification into the position of relational expressions, giving us the following alternate version of (6.22):

$$(6.26) \quad \forall X \forall \Upsilon \exists Z \forall y (\Upsilon Zy \equiv Xy)$$

We then avoid the paradox because ' $\forall y$ ' can no longer be instantiated to the same thing as the preceding existential quantifier. A worry could still be raised: now the Ockhamist is appealing not just to quantification into predicate position, but also to quantification into relational position. And whereas there are natural language quantifiers that we can use to read quantifiers of the former sort, there are no natural

²⁰Williamson's paradox involves a problem with quantification over interpretations as it is found in model-theoretic definitions of logical consequence, but it is readily adapted to the case of assignment relations, as we see below.

language analogues to quantifiers binding variables in relational position.²¹ One could thus worry that the above principle isn't equally intelligible as the earlier (6.22). But the Ockhamist could also adopt an intermediate position, and appeal only to predicative quantification by again making use of pairs:

$$(6.27) \quad \forall X \forall \Upsilon \exists Y \forall y (Y \langle \Upsilon, y \rangle \equiv Xy)$$

thereby sidestepping the worry about intelligibility.²²

We can raise problems having to do with Russell's Paradox for the Ockhamist in another way too, however. The Ockhamist may have an account of the semantics of predicates and predicative quantifiers that avoids the need to appeal to properties. But the fact remains that natural language allows us to use predicates to form terms for properties: we have not only predicative expressions like 'happy' and 'courageous', but also property-descriptions like 'the property of being happy' and 'the property of being courageous' to deal with. Even a proponent of the Ockhamist Account will at some point have to face the question of what semantic account she is prepared to offer for *these* expressions.

Recall that our Ockhamist, like Davidson, grants that properties exist. It therefore stands to reason that she would be willing to allow that property-descriptions have the function of denoting properties. What she denies is just that properties are involved in the semantics of predicates and predicative quantifiers. But if she grants this, it becomes a real question how he aims to avoid Russell's Paradox. Suppose, for instance, that she allows the formation of λ -terms for properties. She then faces the question of how she will prevent us from inferring the following from her principle of Predicative Concept Comprehension:

$$(6.28) \quad \exists Y \forall y (Yy \equiv \exists Z (y = \lambda z [Zz] \wedge \neg Zy))$$

or, alternatively, how she will prevent us from deriving a contradiction from this instance of her comprehension principle.

²¹Again, see Rayo and Yablo (2001) for a claim to the contrary.

²²In fact, Boolos (1985) makes use of second-order quantification of just this sort. Given that Boolos is inclined to read his second-order quantifiers as plural quantifiers, this suggests yet another route for the Ockhamist: in place of quantification over assignment relations, he could plurally quantify over pairs and offer the following:

- $\forall X \forall \Upsilon \exists x x \forall y (\langle \Upsilon, y \rangle \prec x x \equiv Xy)$

We would then have pairs that (in Rayo's sense) "map" predicative variables to the plurality consisting of the things that fall under X . This strategy, unlike the one considered above, would, however, once again raise the questions of how to deal with "empty concepts."

The Ockhamist has two options. On the one hand, she can retreat, and deny that even property-descriptions have the function of denoting properties. She then faces the challenge of giving an alternative semantics for such expressions — no small order, it would seem. Alternatively, she can continue to allow properties into her semantics (as things denoted by property-descriptions), but offer some means of avoiding the contradiction. There are, as we've seen, maneuvers that one could try to make when faced with difficulties of this sort. But whatever strategy she avails herself of, it may then be possible to adapt it to the purposes of the property-based approach as well. It is thus not evident that the Ockhamist has much of a leg up on the property-based theorist vis-à-vis Russell's Paradox once we widen our gaze and consider not just predicative expressions, but nominalizations of them as well.

6.8 Appendix

The proof of Bernays' Principle proceeds by showing that a contradiction results from the assumption that there are some pairs — call them the pp 's — which are such that given any things, the pp 's map something (some object) onto those things:

$$(6.29) \quad \forall uu \exists y \forall z (\langle y, z \rangle \prec pp \equiv z \prec uu)$$

To get a contradiction from this assumption, the proof will appeal to the rr 's, which are such that any y is one of the rr 's just in case $\langle y, y \rangle$ is not one of the pp 's:

$$(6.30) \quad \forall y (y \prec rr \equiv \langle y, y \rangle \not\prec pp)$$

The problem will be that the pp 's can't map any object onto the rr 's, on pain of contradiction.

This appeal to the rr 's is not, however, innocuous. For as we've noted on various occasions, "empty pluralities" don't exist. Again, recalling Boolos' (1984) example: for there to be some gunslingers (plural), there has to be at least one gunslinger (singular) — if nothing is a gunslinger, there are no such things as the gunslingers. Thus, for the appeal to the rr 's to be legitimate, we have to show that at least one thing satisfies the condition we used to introduce the rr 's, that is, that:

$$(6.31) \quad \exists y (\langle y, y \rangle \not\prec pp), \text{ or: } \neg \forall y (\langle y, y \rangle \prec pp)$$

Before proceeding to the proof of Bernays' Principle itself, we therefore first show that (6.31) holds given the assumption (6.29).

We begin by establishing what I'll call the Uniqueness Lemma. Recall our definition of what it is for some pairs to map an object onto some things:

Def. the xx 's map y onto the uu 's iff $\forall z(\langle y, z \rangle \prec xx \equiv z \prec uu)$

The Lemma is as follows:

Uniqueness Lemma: if the xx 's map y onto the uu 's and also map y onto the vv 's, then the uu 's are the vv 's, i.e. $\forall z(z \prec uu \equiv z \prec vv)$.

Proof: suppose (i) $\forall z(\langle y, z \rangle \prec xx \equiv z \prec uu)$ and (ii) $\forall z(\langle y, z \rangle \prec xx \equiv z \prec vv)$. Let a be one of the uu 's. From (i) we have it that $\langle y, a \rangle \prec xx$, and from (ii) it then follows that $a \prec vv$. Now let a be one of the vv 's. From (ii) we have it that $\langle y, a \rangle \prec xx$, and from (i) it then follows that $a \prec uu$. Thus $\forall z(z \prec uu \equiv z \prec vv)$. \square

Intuitively, what this shows is that talk of pairs mapping objects onto pluralities can do duty for talk of functions mapping objects onto pluralities. Applied to our pp 's, the Lemma tells us that if the pp 's map a certain object to some plurality, they map it to that plurality uniquely — there is no distinct plurality to which the pp 's also map that object.

To show that (6.29) implies (6.31), we show that (6.29) together with the negation of (6.31):

$$(6.32) \quad \forall y(\langle y, y \rangle \prec pp)$$

leads to a contradiction.

Proof: Assume (6.29) and (6.32). Let a be some arbitrary object, and let the aa 's be just a , that is, $\forall y(y \prec aa \equiv y = a)$. Now by (6.29), the pp 's map something, call it b , onto the aa 's, that is $\forall z(\langle b, z \rangle \prec pp \equiv z \prec aa)$. For the case of b itself, we thus have it that $\langle b, b \rangle \prec pp \equiv b \prec aa$. And from (6.32), we know $\langle b, b \rangle \prec pp$, meaning that $b \prec aa$. But from the definition of the aa 's, this means that $b = a$. So the pp 's map a onto the aa 's. Generalizing, we see that the pp 's map every object onto the plurality consisting of just that object.

But now take any two distinct objects c and d and let the ee 's be such that $\forall y(y \prec ee \equiv y = d \vee y = e)$. By (6.29), the pp 's map something, call it o , onto the ee 's. But we've just seen that, given (6.32), the pp 's map o onto its

own singleton plurality (that is, they map o to the oo 's, which are such that $\forall y(y \prec oo \equiv y = o)$). This singleton plurality is of course distinct from the ee 's. But this contradicts the Uniqueness Lemma. So (6.29) and (6.32) lead to a contradiction. \square

Having established this, we now prove Bernays' Principle:

Bernays' Principle: given any ordered pairs, there are some things onto which those ordered pairs map nothing. That is: $\forall xx(\text{Pairs}(xx) \rightarrow \exists uu \neg \exists y(\text{the } xx\text{'s map } y \text{ onto the } uu\text{'s}))$, or equivalently: $\neg \exists xx(\text{Pairs}(xx) \wedge \forall uu \exists y(\text{the } xx\text{'s map } y \text{ onto the } uu\text{'s}))$.

Proof: suppose there are some ordered pairs, call them the pp 's, which are such that for any things, the pp 's map something onto those things. Let the rr 's be such that any y is one of the rr 's just in case $\langle y, y \rangle$ is not one of the pp 's. (This appeal to the rr 's is, as we've seen, legitimate.) By hypothesis, the pp 's map something, call it o , onto the rr 's. Now either $\langle o, o \rangle$ is one of the pp 's or it is not. Case 1: suppose $\langle o, o \rangle$ is one of the pp 's. Then by definition of the rr 's, o is not one of the rr 's. But since $\langle o, z \rangle$ is one of the pp 's just in case z is one of the rr 's (for any z), then given that o is not one of the rr 's, $\langle o, o \rangle$ is not one of the pp 's, contrary to our supposition. Case 2: suppose $\langle o, o \rangle$ is not one of the pp 's. Then by definition of the rr 's, o is one of the rr 's. But since $\langle o, z \rangle$ is one of the pp just in case z is one of the rr 's (for any z), then given that o is one of the rr 's, $\langle o, o \rangle$ is one of the pp 's, contrary to our supposition. Thus, since either case leads to a contradiction, there are no ordered pairs which are such that, for any things, those pairs map something onto those things. \square

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