Being Something: Properties and Predicative Quantification

Michael Rieppel
Syracuse University
morieppe@syr.edu

If I say that Alice is everything Oscar hopes to be (healthy, wealthy, wise, etc.), I seem to be quantifying over properties. That suggestion faces an immediate difficulty, however: though Alice may be wise, she surely is not the property of being wise. This problem can be framed in terms of a substitution failure: if a predicate like 'happy' denoted a property, we would expect pairs like 'Oscar is happy' and 'Oscar is the property of being happy' to be equivalent, which they clearly are not. I argue that a Fregean response that draws a distinction between objects and concepts faces serious difficulties, and that a syntactic solution to the substitution problem likewise fails. I propose to account for the substitution failure by instead distinguishing different ways that expressions can stand for properties: whereas 'the property of being happy' refers to a property, 'happy' expresses or ascribes that property. I go on to compare this view to proposals made by Wright (1998) and Liebesman (2015), and end by drawing out a consequence my proposal has for a debate about the ontological commitments of predicatively quantified sentences.

1. The elusive role of properties

The world can appear to be just a vast collection of things. But in order to describe the world it will not do to just mention this thing and that. We have to say something about what those things are like: Alice, we might say, is wise, and Oscar, though not wise, is—maybe because of that—happy. And indeed, if this is how things are, we can further say that Alice is something Oscar is not, or perhaps even that there is nothing that Oscar and Alice both are.

But what are these things Alice is but Oscar fails to be, and which I quantify over when I say that Alice is everything I aspire to be? A natural response is that they are properties. The proposal is no sooner on the table than problems emerge, however. Alice, though wise, surely is not the property of being wise, nor is that property among the things I aspire to be. Properties, it seems, are just more particular things.

We can sharpen the problem in the formal mode. The proposal will now be that predicates like 'happy' and 'wise' denote properties, and

that predicative quantifiers like the 'something' in 'Alice is something Oscar is not' bind variables that take properties as values. The objection is that this cannot be right, in view of substitution failures like the following:

(1) (a) Oscar is [happy].

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

If 'happy' denoted the property of being happy, this substitution should be truth-preserving, but it obviously is not. Properties, so the objection goes, are denoted by nominal expressions like 'the property of being happy' and quantified over in nominally quantified sentences like 'Alice has some property Oscar lacks', but they cannot be what predicates denote or what properly predicative quantifiers quantify over.[1]

One reaction to this problem would be to jump ship to the nominalist camp. Predicates, one might insist, let us describe things as being this way or that, but not by way of denoting properties, or anything else for that matter. An immediate hurdle confronting this view is that it threatens to rob us of the resources needed to make sense of the possibility of quantifying into predicate position. For if predicates do not denote anything, there looks to be nothing for predicative quantifiers to quantify over, and so no obvious way to understand the semantics of such quantifiers.[2]

Moving forward, I will set the nominalist view aside. The question I want to consider is how to deal with substitution failures like the above while holding on to the idea that there are things that predicates

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[1] A note on terminology: when I speak of 'nominal' expressions, I do not mean the class of noun phrases, but what I below call *N-type* or *referring* expressions, that is, expressions capable of occurring as, for instance, subjects in predicational sentences and arguments of transitive verbs. By 'nominal quantifiers' I mean quantifiers that quantify into the position of such *N-type* expressions.

[2] The view that predicates do not denote things is prominently advocated by Davidson (2005), for example. Indeed, he occasionally appeals to considerations having to do with quantification in support of his view, commending Quine for pointing out that 'if [the words "pretty" and "witty" in "Sally is pretty" and "Betty is witty"] 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, p. 112). The trouble with the suggested *modus tollens* is that such predicative quantification evidently *is* possible. This is not to say that the nominalist may not have ways to address the issue—one might, for example, look towards substitutional quantification or Boolos's (1984) plural treatment of second-order logic—but a full investigation of the matter is a paper unto itself. I undertake it in Rieppel (2013a).

denote, and which predicative quantifiers can accordingly be construed as quantifying over. I will consider three competing answers to that question, and argue that we should opt for the third.

The first option is to adopt a Fregean approach, and to hold that the post-copular expressions in (1a) and (1b) must denote different things. Properties, the Fregean will say, are objects of a certain sort, in the sense that they are denoted by certain nominal expressions and quantified over in certain nominally quantified sentences. Predicates like 'happy', he will insist, denote things of a fundamentally different kind—what Frege termed *concepts*. The Fregean would thus have us abandon the property-based view: the things denoted by predicates and quantified over by predicative quantifiers are not properties, but things of this fundamentally different kind.

A second option is to look for a syntactic solution. Truth conditions, we should remind ourselves, are determined by both syntax and semantics. We might therefore seek a syntactic explanation of the change in truth conditions that we observe in our substitution problem, having to do with a difference in the syntax of the post-copular expressions involved in (1a) and (1b) rather than a difference in what they denote. If successful, that would let us avoid the Fregean's semantic story and continue to accord properties a role in predication.

A third and more radical option is to seek a semantic explanation, but to reject the Fregean thesis that the only semantically relevant feature of an expression is what it denotes, and that the semantic difference between nominal and predicative expressions therefore corresponds to a fundamental difference in the kind of thing they denote. I will argue that neither the Fregean approach nor the syntactic alternative succeed, and that we should embrace this third option. Briefly, the thought will be that we ought to accord semantic relevance, not just to *what* an expression stands for, but also to *how* it stands for something. Our substitution failure has to do with a difference in the semantic *relation* the post-copular expressions in (1a) and (1b) bear to the relevant property: whereas 'the property of being happy' *refers* to it, the predicate 'happy' *expresses* or *ascribes* it.[3] Properties, on this view, are, like everything there is, capable of being referred to and nominally quantified over. What sets them apart is that they are also ascribed.

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[3] Similar proposals have been made by Wright (1998), Hale and Wright (2012), and Liebesman (2015). I offer critical discussion of Wright and Liebesman's views, and their differences from the present proposal, in §5.

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 behaviour of the concept is essentially predicative … consequently it can be replaced … only by another concept, never by an object. (Frege 1892, pp. 187–9).

This Fregean idea can be systematically developed as follows.[4] 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: for any types X and Y, 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 $\langle N, S \rangle$.[5] It is

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[4] Compare, for example Evans's (1982) development of the Fregean position. A more recent example of a broadly Fregean semantics is Heim and Kratzer (1998). The general idea of drawing type-theoretic distinctions between objects and concepts, and concepts of different 'levels', of course has its root in Frege's own writings, including Frege (1891, 1892).

[5] I should here perhaps say something about the copula and my practice—which some may find objectionable—of calling the adjective 'happy' a predicate. According to a certain 'austere' view, common especially in the literature on Frege, only full verb phrases—in this case, phrases that include a copula, like 'is happy'—are honoured as genuine *predicates*. The notion of a concept, it will be insisted, concerns predicates thus conceived, and not 'predicative' expressions like 'happy'. I will have more to say about the austere view as we continue, but let me just make three points for now. First, the need for the copula is far from 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'. Indeed, as we will see below, even English allows omission of the copula in certain embedded contexts, and some dialects allow its omission in unembedded contexts as well. Pustet (2003) contains a survey of the cross-linguistic distribution of the copula. Second, at least in 'On Concept and Object', Frege does not adopt the austere point of view: he there characterizes the copula 'as a mere verbal sign of predication', and is accordingly content to say that in the sentence 'The Morning Star is a planet', the 'concept word' [*Begriffswort*] is the post-copular 'a planet', rather than the copula-including 'is a planet' (Frege 1892). The view that copular forms of 'be' are semantically

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, but whereas we have assigned 'Oscar' to type N, quantificational expressions like 'some dog' have type $\langle\langle N,S\rangle,S\rangle$.[6]

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 (or 1 and 0). 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 Fregean 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 predicational, and involves a post-copular 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 post-copular expression maps the object denoted by the pre-copular expression to the True. The sentence 'Oscar is the property of being happy', by contrast, is not a predicational 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 (or N-type) expression, rather than a concept-denoting (or $\langle N,S\rangle$-type) expression, in post-copular position express identity claims rather than predicational claims.

Our substitution failure is thus explained by appeal to the idea that 'happy' and 'the property of being happy' denote items of a fundamentally different kind: whereas 'the property of being happy' denotes

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vacuous, and that adjectives like 'happy' denote concepts (items of type $\langle e,t\rangle$), has been adopted by many subsequent theorists as well. See, for example, Mikkelsen (2011) and Heim and Kratzer (1998, §4.1). Finally, to the extent that this is a terminological issue, we can set it aside: let it just be understood that our problem is one about the semantics of the kind of expressions (however one wishes to label them) that occur after the copula in predicational sentences, and into the position of which predicative quantifiers quantify. Our 'Fregean proposal' (whatever the historical merits of the label) is put forward as a solution to that problem.

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

an *object* of a certain sort, namely, the property of being happy, the predicate 'happy' denotes a *concept*. The predicational sentence 'Oscar is happy' is true because the concept denoted by 'happy' indeed takes Oscar to the True. The equative sentence 'Oscar is the property of being happy', on the other hand, is false, since Oscar is not identical to the property of being happy. The contrast between nominal and predicative quantification can then similarly be 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, thus ought to be given up, according to the Fregean.

The Fregean proposal insists on a fundamental difference between concepts ($\langle e,t \rangle$-type items) and objects (*e*-type items, including properties). This is not to say that a Fregean might not wish to allow that there is a close connection between concepts, such as the concept denoted by the predicative expression 'happy', and certain objects, such as the property qua object denoted by the nominal expression 'the property of being happy'. Frege (1892), for example, speaks of there being objects that 'go proxy for' concepts. Chierchia and Turner (1988) develop a Fregean view along these lines, which countenances 'individual correlates' for concepts.[7] Such proxy objects would be something like concepts denuded of their 'essentially predicative' nature, as the Fregean might put it—a kind of ontological parallel to the linguistic process of nominalization. But whatever there may be in the way of such correlation, the hallmark of the Fregean view is that there is, for all that, a strict difference between concepts and objects, including proxy objects. It is this difference in the type of thing denoted by predicative expressions like 'happy' and nominal expressions like 'the property of being happy', respectively, that the

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[7] There are aspects of the specific version of the proxy-object view developed by Chierchia and Turner (1988) that may lead them to pursue a different account of our substitution failure from the Fregean proposal I have here articulated. Chierchia and Turner adopt what I earlier (note 5 above) called the 'austere' view of predicates—on which only verb phrases like 'is happy' denote concepts, with adjectives like 'happy' denoting *e*-type correlates—and also impose a syntactic restriction on the 'is' of predication (their 'be₂') so that it only accepts adjectives and prepositional phrases. They may therefore be inclined to instead pursue the kind of syntactic proposal against which I argue in §3 below. Second, since they do countenance genuinely concept-denoting expressions, their view will encounter expressibility problems when it comes to the denotation of such expressions. For discussion of the proxy-object view, see also Liebesman (2015).

Fregean proposes to leverage to account for our substitution failure. This strict separation between objects and concepts, however, also raises a problem for the Fregean proposal, to which I now turn.

2.1 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 the definite description '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 will call Strict Denotationalism.

> **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 creates a well-known difficulty for the Fregean. 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 the predicate 'happy', for example, denotes can we develop the Fregean proposal into a semantic theory that delivers specific truth conditions for sentences like 'Oscar is happy'.

The problem 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 will not, as we have seen, let us say that

(2) 'Happy' denotes the property of being happy.

For, given that the *N*-type expression '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. 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 as though the Fregean cannot even say that there is *something* that '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*. And of course there is no item of type *e* denoted by the ⟨*N,S*⟩-type expression 'happy' according to the Fregean theory.[8] The theory as a whole thus appears to be incapable of being coherently stated. One is, I think, hard-pressed 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'.

2.2 Dummett's defence

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 *N*-type 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 ⟨*N,S*⟩-type expression like 'happy'. To avoid his predicament, the Fregean therefore needs to find a way to use ⟨*N,S*⟩-type expressions, rather than *N*-type expressions, to state the denotation of ⟨*N,S*⟩-type expressions. In the case of 'happy', the obvious candidate for accomplishing this is of course just the word 'happy' itself. Now we cannot just say that 'happy' denotes happy, since that is not even a grammatical statement. But we can circumvent this problem—or so Dummett claims—by instead using the following kind of construction:

(3)   Happy is what 'happy' denotes.

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[8] Frege recognized this difficulty. In a letter of 29 June 1902 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 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).

Dummett seems to want to understand this sentence as involving the equation of two $\langle N,S \rangle$-type expressions, exhibiting the same kind of structure that we find in 'reverse pseudoclefts' like

(4)   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.[9]

The trouble with Dummett's proposal is that 'Happy is what "happy" denotes' does not actually exhibit the structure we find in reverse pseudoclefts like 'Happy is what Alice used to be'. Free relative clauses like 'what Alice used to be' contain a 'gap', syntactically represented by a trace co-indexed with the *wh*-word at the front of the clause.[10] The *N*-type free relative 'what Oscar bought', for instance, has the form 'what$_i$ Oscar bought t_i', and the $\langle N,S \rangle$-type free relative 'what Alice used to be' has the form 'what$_i$ Alice used to be t_i'.

What is noteworthy is that when dealing with reverse pseudoclefts we can always substitute the expression with which the free relative is being equated into the gap position occupied by the free relative's trace, and thereby obtain a sentence that is both grammatical and semantically entailed by 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

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[9] Dummett's view that reverse pseudoclefts involve the equation of two predicative phrases is suggested by the fact that both the pre- and post-copular elements of (4) can be used predicatively:

(a) Oscar is happy.

(b) Oscar is what Alice used to be (i.e. happy).

An alternative is to say that the *wh*-phrase in (4) has the higher type $\langle \langle N,S \rangle, S \rangle$. See Heycock and Kroch (1999) for discussion and a defence of the equative analysis. I will for concreteness assume Dummett's equative analysis, though the objection I mount (namely, that (3) is not a reverse pseudocleft, and does not express what Dummett means it to express) does not depend on this. Thanks to a referee for pressing this point.

[10] The trace is usually assumed to be the result of movement of the *wh*-word out of the gap position. See Caponigro (2003) for a detailed investigation of free relatives, and Heycock and Kroch (1999) for discussion of specificational pseudoclefts involving predicative free relatives like 'what Alice used to be'.

N-type expressions, we can substitute 'that ball' into the position of the trace to obtain 'Oscar bought that ball':

(5)   (a)   'Happy is what$_i$ Alice used to be t_i' entails 'Alice used to be happy'.

      (b)   'That ball is what$_i$ Oscar bought t_i' entails '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, exhibits the structure of a reverse pseudocleft only if the kind of transformation exhibited by (5a) and (5b) produces a sentence that is both grammatical and entailed by the original construction.

   The problem, of course, is that if we perform the relevant kind of substitution on Dummett's 'Happy is what$_i$ "happy" denotes t_i', what we get is '"happy" denotes happy', which, as we have already had occasion to note, is not even grammatical, let alone entailed by the original sentence. The generalization suggested by our test is that, in order for a free relative as a whole to be predicative, the trace it contains itself needs to occupy a predicative position. The reason Dummett's 'Happy is what$_i$ "happy" denotes t_i' fails our test is that the direct object position occupied by the trace in 'what$_i$ "happy" denotes t_i' is nominal (of type *N*), just like the position occupied by the trace in 'what$_i$ Oscar bought t_i'. Rather than exhibiting the equative form $\langle N,S \rangle$-be-$\langle N,S \rangle$ that we find in reverse pseudoclefts like '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 (i.e. an inverted predicational structure) 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 we were after when we wanted to be told what it is that 'happy' denotes.

   Though Dummett's proposal has been found wanting by other commentators, the reason I have indicated for its failure has not, I believe, been sufficiently appreciated in the literature. The standard objection to Dummett relies on what I earlier (in note 5 above) called the 'austere' conception of predicates. The problem, it is alleged, is that Dummett fails to make a sharp enough distinction between

predicative phrases like 'a philosopher' and copula-including phrases like 'is a philosopher'. The objection, then, is that he has not succeeded in specifying the denotation of genuine predicates (austerely conceived)—rather than that of predicative phrases—because predicative phrases like 'a philosopher' or (allegedly) 'what "is a philosopher" stands for' cannot be grammatically substituted for full predicates like 'is a philosopher'. See, for example, Hale and Wright (2012), Textor (2010), MacBride (2006) and Wright (1998) for recent versions of this objection. The objection fails to convince, however: the ungrammaticality that results from substituting a predicative expression for an austerely conceived predicate can be explained by the fact that English syntactically requires a copula, and need not be taken to demonstrate anything about what such phrases respectively denote. The deeper problem with Dummett's proposal is that free relatives like 'what$_i$ "happy" denotes t_i' or 'what$_i$ "ξ is a philosopher" stands for t_i' are not even *predicative*—that is, are not of a kind with 'what$_i$ Alice used to be t_i'—and that the reason for this has precisely 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.

2.3 A twist on Dummett's defence

Before moving on, let me register that there is at least one way in which one might seek to rework Dummett's strategy in the face of the difficulty 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 problem he encounters is that the direct object position of 'denotes', like that of 'bought' and other transitive verbs, demands expressions of type N rather than type $\langle N,S \rangle$. Taking note of this point, the committed Fregean might conclude that where natural language will not 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 primitive 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 could now be read predicatively.

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Though this move marks out a position in logical space, it does have its drawbacks. If Higginbotham (1990) is right, no natural language verb 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 logically 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 am inclined to think we would still merely be whistling.

It might be objected that, *pace* Higginbotham (1990), there actually *are* verbs that take <N,S>-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 <N,S>-type direct objects. We can, for example, say that the German word 'fröhlich' means *happy*, and similarly, staying within English, that 'happy' means *happy*. Could we then not just construe "'happy" denotes$_p$ happy' on the model of "'happy" means *happy*' or "'fröhlich" bedeutet *fröhlich*'?

The suggestion is intriguing. But note that 'means' is in various respects rather unusual. 'Means' does not 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.[11] But however exactly we explain the phenomenon, Sellars does seem right to hold that when, for example, 'happy'

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[11] Not quite an ordinary quotational context, it seems. As Sellars observes, "'und" means *and*' does not appear to be equivalent to "'und" means "and"', since it does not seem right that 'und' 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).

occurs after 'means', it is at least not functioning as a predicate. And if that is the case, the Fregean cannot of course 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.

Another class of cases that might be thought to belie Higginbotham's thesis involves verbs like 'remains' and 'seems', as in 'Oscar remains happy' and 'Oscar seems happy'. Here 'happy' now does appear to be functioning in its ordinary, predicative way. But that is also the problem: 'Oscar seems happy' can be paraphrased as 'It seems that Oscar is happy', suggesting that the predicate 'happy' is taking 'Oscar' as its argument. (Similarly for 'remains': 'Oscar remains happy' can be paraphrased as 'It remains the case that Oscar is happy'.) The Fregean therefore would not want to appeal to such verbs as a model for 'denotes$_p$', since he would not want to have it that '"happy" denotes$_p$ happy' says (in some modality or another) that the word 'happy' is itself happy.

The Fregean thus looks to be stuck having to introduce 'denotes$_p$' as a logically alien bit of vocabulary that is unlike anything we find in natural language, thus incurring the worries about intelligibility mentioned above. This is not a knock-down objection. Semanticists are at liberty to introduce technical notions when needed. But the logically alien character of 'denotes$_p$' makes it a particularly worrisome case, and as such something one might well like to avoid. Furthermore, since the denotation$_p$ relation is supposed to relate objects (specifically, predicative expressions) to concepts, that is, items of type $\langle e, t \rangle$, it is by Fregean lights a different relation from the denotation relation, which relates expressions to objects, that is, items of type e. And if we are going to appeal to distinct semantic relations anyhow, then there are—as I argue below—more palatable ways of doing so that do not involve the introduction of logically alien vocabulary.[12]

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[12] In 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, p. 460, n. 27) points out, Dummett 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 in the manner of our 'denotes$_p$'. However, if this was Dummett's intention, the detour through free-relatives is of course otiose: we need not state the denotation of 'happy' by saying that happy is what 'happy' stands for, but could simply say that 'happy' stands for happy.

We should note that the Fregean could avoid the charge of unintelligibility I have raised by maintaining that the suspect claim that 'happy' denotes$_p$ happy is intended simply as shorthand for either (i) the claim that for any x, 'happy' applies to x iff x is happy, or (ii) the claim

3. The syntactic proposal

The Fregean proposal may invite the charge that it jumps the gun anyhow. The distinction between equative and predicational sentences is surely relevant to our substitution failure. But we can, it might be suggested, draw that distinction well enough by appeal to syntax, without relying on the Fregean's problematic 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 copular sentences that contain a definite description in post-copular position, it might be claimed, are syntactically required to be equative. One way to develop the suggestion would be to hold that English has two forms of 'is'—an 'is' of predication and an 'is' of identity—and that the 'is' of predication incorporates a syntactic restriction against definite descriptions, thus forcing an equative reading on copular sentences with definite descriptions in post-copular position. Whatever the details, the suggestion is that we can explain the fact that 'Oscar is happy' is predicational while 'Oscar is the property of being happy' is equative by appeal to the syntactic category of the post-copular expressions, rather than in terms of a fundamental difference in what those expressions denote. This would let us 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 predicational 'Oscar is happy', we would say, predicates the property of being happy of Oscar, and is true because Oscar has that property, but 'Oscar is the property of being happy', which (so the proposal runs) is syntactically required to be equative, is false, since Oscar is of course not identical to that property.

This syntactic proposal also fails, however, for two related reasons. The first problem is that definite descriptions are 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

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that for any term α, ⌜Happy(α)⌝ is true iff the item denoted by α is happy. Heck and May (2006) and Furth (1993), for instance, suggest that Frege's talk of predicates denoting concepts be understood along the lines of (ii). However, this now looks as though it just collapses the Fregean proposal into the kind of nominalist approach to predicates advocated by Davidson (2005). As I said at the outset, I will set aside consideration of nominalist approaches in this paper, though I shall have something to say about Davidsonian syncategorematic clauses below.

(1892), for instance, takes it that the indefinite '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 in a moment, there is good reason to think it is—that already spells trouble for the syntactic proposal. For if we allow that indefinite DPs can occupy post-copular position in predicational copular sentences, then the idea that there is nevertheless a *syntactic* restriction against definite DPs in such sentences would commit us to the non-standard view that syntactic restrictions may concern properties of an expression beyond its phrasal category.[13]

Second, the claim that definite descriptions are indeed barred from predicative occurrence is itself by no means uncontroversial. As Strawson (1950) already observed, copular sentence containing definite descriptions in post-copular position can have a distinctly predicational character:

> 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. (Strawson 1950, p. 320)[14]

In fact, Strawson's view enjoys considerable support from a number of diagnostics for predicativity that have been proposed in the literature on copular clauses. I will look at four of those here.

3.1 Four predicativity tests

The first test, employed by Partee (1986) and further developed by Rothstein (1995), involves the exceptional case marking (ECM) verb 'consider'. This verb is able to embed 'small clauses' composed of the pre- and post-copular elements of paradigmatically predicational sentences, with the copula itself omitted, as in (6b) below:

(6) (a) She considers [Cicero to be spellbinding].

     (b) She considers [Cicero spellbinding].

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[13] See, for example, 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.

[14] The view that definite descriptions occurring in post-copular position can be predicative is largely the status quo in the linguistics literature. See, for example, Partee (1986). Mikkelsen (2011) provides a helpful overview of the literature. In the philosophical literature, Fara (2001) has argued for this view as well. Fara goes further than most, defending the view that definite descriptions are always predicative in character.

By contrast, omission of the copula is marked if we embed paradigmatically equative sentences:

(7)   (a) She considers [Cicero to be Tully].

    (b) *She considers [Cicero Tully].

We can therefore test whether an expression admits of predicative occurrence by seeing whether it can function as the second element of a small clause embedded under 'consider'. The test clearly yields the verdict that both indefinite and definite descriptions can be predicative:

(8)   (a) She considers [Napoleon a brilliant strategist].

    (b) She considers [Napoleon the greatest French soldier].

A second diagnostic, employed by Geist (2008), Mikkelsen (2005) and Williams (1983), 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 predicational, it can be used to answer questions introduced by the interrogative 'what'. By contrast, if such a sentence is not predicational, it cannot be used to answer questions introduced by 'what', though it may be used to answer questions introduced by 'who':

(9)   (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 descriptions may function predicatively in copular sentences:

(10) (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-predicational copular sentences can be used to answer 'What'-questions:[15]

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[15] In the taxonomy of Higgins (1979), the answer in (11a) would be classified as an identificational clause, and the answer in (11b) as a specificational clause. There is disagreement about whether such clauses are species of the equative sort or whether either constitutes a distinct category of its own. See Mikkelsen (2005) for a defence of the view that specificational clauses, and certain identificational clauses, are not equative. It is generally agreed, however, that the post-copular elements in such clauses at any rate do not function as predicates.

(11) (a) What is that? That is Paris.

(b) What is the capital of France? The capital of France is Paris.

A related datum, noted by Higgins (1979), is that predicative expressions can appear in pseudocleft variants of the corresponding copular sentences like

(12) (a) What Cicero is is [spellbinding].

(b) What Napoleon is is [the greatest French soldier].

By contrast, paradigmatically referential expressions, like proper names, cannot:

(13) (a) *What Cicero is is [Tully].

(b) *What the greatest French soldier is is [Napoleon].

The test again gives a positive verdict for Strawson's description 'the greatest French soldier'. Unlike the interrogative-based test, this test also seems to give intuitively correct results in cases involving expressions that denote non-human objects:

(14) (a) What Paris is is [sprawling].

(b) ??What the capital of France is is [Paris].

A final test, variants of which are employed by Heller (2005) and Higgins (1979), involves coordination. According to this test, an expression is capable of functioning predicatively in post-copular position just in case that expression can be coordinated with paradigmatically predicative expressions (such as adjectives):

(15) (a) He is clever, audacious, and [vindictive]

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

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

(d) *He is clever, audacious, and [Napoleon].

Again, the test supports the view that both indefinite and definite descriptions can function predicatively in copular sentences.

3.2 Summary
The view that there is a syntactic restriction which prohibits definite descriptions from occurring in post-copular position in predicational

sentences therefore does not enjoy much plausibility. One difficulty is that this view would also prohibit us from treating copular sentences with indefinite descriptions in post-copular position as predicational, at least if we are to maintain the standard view that syntactic restrictions may not concern properties of the complement beyond its phrasal category. Second, the view does not gain support from any of our diagnostics. The syntactic proposal therefore cannot explain our substitution failure.

Before we continue, let me pause to note some further subtleties about definite descriptions that will be important in the remainder of this paper. The fact that definite descriptions are able to function predicatively shows that we cannot maintain that, as Frege put it, 'the singular definite article always indicates an object'. However, even if definite descriptions can function predicatively, that does not force us to conclude that they do so in all their occurrences. We can, for instance, still hold that when, for example, a description like '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 predicational sentence (as in 'The mayor of Oakland ordered a raid'), it functions referentially (i.e. as an *N*-type expression).

Indeed, granted that definite descriptions are capable of functioning referentially, we would expect them to be capable of doing so in post-copular 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 descriptions as complements are not *obligatorily* equative. But they leave it open that such sentences may, for all that, have an equative reading in addition to their predicational reading. As a matter of fact, our interrogative-based test lends support to the idea. For although copular sentences with definite descriptions in post-copular position are, as we have observed, acceptable as answers to questions introduced by 'what', suggesting that they have a predicational 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:[16]

(16) (a) What is Alice? Alice is the mayor of Oakland.

　　 (b) Who is Alice? Alice is the mayor of Oakland.

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[16] Geist (2008, 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 Partee (1986) and Mikkelsen (2011).

Furthermore, certain definite descriptions are remarkably resistant to a predicative reading. Compare, for instance, the descriptions 'the mayor of Oakland' and 'the city of Oakland'. Superficially, the two look strikingly similar, but they differ semantically. First, whereas 'the mayor of Oakland' has a possessive or genitive character, being roughly synonymous with 'Oakland's mayor', 'the city of Oakland' does not, since it is not synonymous with 'Oakland's city'. This contrast also manifests itself in the the way the relevant nouns interact with the verbs 'have' and 'be': whereas Oakland *has* a mayor, it *is* a city. Intuitively, possessive descriptions like 'the mayor of Oakland' indicate a role without directly identifying who or what it is that plays the relevant role, whereas descriptions like 'the city of Oakland' directly identify the unique satisfier of the descriptive material (Oakland, in this case). Second, such 'identifying descriptions' seem only to admit of a referential (or *e*-type, in Fregean terms) reading, since copular sentences containing such descriptions in post-copular position are uniformly equative, as the reader may confirm by applying our tests. What is particularly relevant to our present concerns is that the description 'the property of being happy' seems to be of this identifying sort, meaning that 'Oscar is the property of being happy' is indeed equative.[17] So although the syntactic proposal according to which predicational sentences syntactically prohibit definite descriptions in post-copular position must be rejected, the more general point that our substitution failure involves a shift from a predicational to an equative sentence stands. What we need is a semantic explanation of the substitution failure that accommodates these points, but that does so without the dubious concept–object distinction involved in the Fregean's semantic story.[18]

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[17] Compare Teichmann's (1989) distinction between descriptions that are 'directly about' something and those that are 'indirectly about' something. He offers the pair 'the property which enables one to see' and 'the property of having two eyes', the latter being directly about the same property that the former is indirectly about. See also Levinson (1978) and Schnieder (2006) for further relevant discussion.

[18] A referee raises the concern that phrases like 'the city of Oakland' may, syntactically, not be definite descriptions at all, but rather appositive constructions along the lines of 'the city, Oakland' or 'Oakland, the city'. I do not believe this to be the case. What I have called 'identifying descriptions' have also been termed 'pseudo' appositives (Lasersohn 1986), 'close' or 'restrictive' appositives (Meyer 1989), or 'integrated' appositives (Huddleston 2002), to distinguish them from 'true' or 'non-restrictive' appositives like 'the city, Oakland'. As Jackendoff (1984) points out, one way to see that close appositives are not true or non-restrictive appositives is that the latter can involve an indefinite article ('a city, Oakland' or 'Oakland, a city') but the former cannot ('a city of Oakland' sounds bad). Although 'the mayor of Oakland' and 'the city of Oakland' differ semantically, they are both syntactically definite descriptions.

4. An alternative solution to the substitution problem

Let us review. The Fregean and the syntactic proposals both seek to explain our substitution failure in part by drawing a distinction between equative and predicational copular sentences. But whereas the syntactic proposal attempts to leverage a difference in the syntactic category of the post-copular expression, the Fregean claims that it has to do with a difference in their semantic type: whereas the post-copular expression in a predicational sentence is of type $\langle N,S \rangle$, the post-copular expression in an equative sentence is of type N. Due to his commitment to Strict Denotationalism, the Fregean construes that difference in terms of a fundamental difference in the kind of thing denoted by the post-copular expression. He thus takes it that copular sentences are interpreted in accordance with the following principles:[19]

> **Equative:** ⌜α is β⌝ admits of an equative interpretation iff Den(α) is of type e and Den(β) is of type e. In that case ⌜α is β⌝ is true iff Den(α) is identical to Den(β).

> **Predicational:** ⌜α is β⌝ admits of a predicational interpretation iff Den(α) is of type e and Den(β) is of type $\langle e,t \rangle$. In that case ⌜α is β⌝ is true iff Den(α) falls under (or is mapped to the True by) Den(β).

In a follow-up, the referee wonders whether the substitution failure (as well as the fact that identifying descriptions in general force an equative reading, I presume), though not grounded in a syntactic feature of the description, can be explained in terms of its 'identifyingness'. Though I agree that identifyingness plays a role, I do not think it does all the work. As I explain in Rieppel (2013b), identifyingness is ultimately a feature of the property denoted by the complement of the definite article, which then forces a referential (or *e*-type, in Fregean terms) reading on the description. It is the fact that the description is referential that then produces the equative reading. Perhaps there is a way to make identifyingness do all the work of accounting for the equativity, but I do not see how that would go (bearing in mind that it would have to be integrated into a general account of the equative–predicational contrast and the type ambiguity of descriptions). Furthermore, it seems likely that such a proposal would face difficulties explaining why a sentence like 'Oscar is the property all musicians most want to have', which involves a property description that does not appear to be identifying, fails to have a reading on which it predicates this property of Oscar (see also n. 24 below). I direct the interested reader to Rieppel (2013b) for a detailed discussion of identifying descriptions, type ambiguity and the equative–predicational contrast.

[19] Whether 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. I also do not mean to suggest that there may not be structural differences between equative and predicational sentences in addition to the semantic differences highlighted here. See, for instance, Bowers (1993) and Heycock and Kroch (1999) for two different proposals about the syntax of equative and predicational sentences. Parallel remarks apply to the alternative semantic principles we shall shortly go on to consider.

Given that the *N*-type expression 'the property of being happy' de-
notes the property of being happy, properties count as items of type *e*.
They are therefore *not* what predicative expressions like 'happy'
denote. This claim, however, also puts the Fregean in a rather awk-
ward position when it comes to saying what 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.[20] This
would let us join the Fregean in appealing to differences in the se-
mantic type of the post-copular expressions to explain our substitu-
tion failure, while avoiding the conclusion that 'happy' must denote
something of a fundamentally different sort from what any *N*-type
expression denotes.

4.1 Rejecting Strict Denotationalism: Den and Typ

One rather straightforward way to implement this idea formally 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 us the property of being happy as its value. The difference
between the predicate 'happy' and the *N*-type expression 'the property
of being happy', on this view, does not lie in a difference in what the
two expressions denote, but rather in a difference in the value yielded
by the type function. In place of the Fregean's semantic principles, we
would then offer the following:

> **Equative**: $\ulcorner \alpha$ is $\beta \urcorner$ admits of an equative interpretation iff
> $\text{Typ}(\alpha) = N$ and $\text{Typ}(\beta) = N$. In that case $\ulcorner \alpha$ is $\beta \urcorner$ is true iff
> $\text{Den}(\alpha)$ is identical to $\text{Den}(\beta)$.

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[20] An 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 description 'the property of being happy' does not
denote that property. I will not pursue that suggestion here, and will stick with the relatively
standard view that 'denotes' functions disquotationally when applied to *N*-type expressions.

Predicational: $\ulcorner\alpha$ is $\beta\urcorner$ admits of a predicational interpretation iff $\mathrm{Typ}(\alpha) = N$ and $\mathrm{Typ}(\beta) = \langle N,S \rangle$. In that case $\ulcorner\alpha$ is $\beta\urcorner$ is true iff $\mathrm{Den}(\alpha)$ instantiates $\mathrm{Den}(\beta)$.

replacing the Fregean's appeal to the type of thing an expression denotes with an appeal to the type of the expression itself. If we separate facts about denotation from facts about semantic type in this way, we can give an alternative account of the substitution failure.

'Oscar is happy', we will say, is subject to a predicational interpretation because 'happy' is of type $\langle N,S \rangle$. The sentence is true just in case Den('Oscar') instantiates Den('happy'), that is, just in case Oscar has the property of being happy. 'Oscar is the property of being happy', by contrast, involves an N-type expression in post-copular position, and is true just in case Den('Oscar') is identical to Den('the property of being happy'), that is, just in case Oscar is identical to the property of being happy. The truth-conditional difference between 'Oscar is happy' and 'Oscar is the property of being happy', therefore, is not due to a difference in the items respectively denoted by 'happy' and 'the property of being happy', but rather to a difference in the semantic type of these expressions.

This account would also put us in a position to vindicate the view that predicative quantification involves quantification over properties. The following two sentences,

(17) (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 in the type of the variables the quantifiers bind: whereas predicative quantifiers bind $\langle N,S \rangle$-type variables, nominal quantifiers bind N-type variables.

So far, so good. I now turn to a complication. As we saw in the previous section, certain definite descriptions appear to be type-ambiguous, in the sense that they are capable of functioning not just as N-type expressions but also as predicates, that is, as expressions of type $\langle N,S \rangle$. For example, whereas the occurrence of the 'the mayor of Oakland' in 'the mayor of Oakland ordered a raid' is of type N, its occurrence in 'Alice is the mayor of Oakland' (read predicationally) is of type $\langle N,S \rangle$. The issue of type ambiguity is particularly acute if we grant that copular sentences with such definite descriptions as complements are capable of being interpreted both equatively and

predicationally, for then 'Alice is the mayor of Oakland' will involve a complement having a different type depending on how the sentence is interpreted.

This observation raises two questions. First, there is the question of what an $\langle N,S \rangle$-type occurrence of a definite description like 'the mayor of Oakland' denotes. Since equative and predicational readings of 'Alice is the mayor of Oakland' do not seem to differ in their truth conditions, we could take it that whereas an N-type occurrence of the description denotes the mayor of Oakland, an $\langle N,S \rangle$-type occurrence of it denotes the property of being identical to the mayor of Oakland. Alice will have this property just in case she is identical to the mayor of Oakland. Indeed, we could say that this relationship between the denotation of an $\langle N,S \rangle$-type occurrence of a definite description and the denotation of an N-type occurrence of that same description holds quite generally: an $\langle N,S \rangle$-type occurrence always denotes the property of being identical to the item that an N-type occurrence of that description denotes.[21]

The more difficult question is how we should understand this talk of the different types and denotations had by different occurrences of a definite description on the present proposal. One option would be to 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 occurrence of that expression. There is, however, a difficulty with this line. Since denotation and semantic type are, on the present proposal, 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 would want to say, goes with the $\langle N,S \rangle$-type interpretation 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

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[21] Compare 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 λ-notation, the proposal is that an $\langle N,S \rangle$-type occurrence of that 'the mayor of Oakland' denotes $\lambda x[x = \iota x[M(o,x)]]$. An alternative would be to take an $\langle N,S \rangle$-type occurrence of 'the mayor of Oakland' to denote $\lambda x[M(o,x) \wedge \forall y(M(o,y) \to y = x)]$ (compare Fara 2001), or even simply $\lambda x[M(o,x)]$, with uniqueness as a presupposition. I discuss these alternatives in more detail, and opt for the third, in Rieppel (2013b). For present purposes, the differences between them need not concern us; for the sake of simplicity I will work with the Partee-style proposal laid out in the body of the paper.

Oakland' as having type N but denoting the property of being identical to the mayor of Oakland. Matters of semantic type and denotation are just not connected closely enough on this view of the matter.

To avoid this kind of type–denotation mismatch, we could instead 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.

4.2 Rejecting Strict Denotationalism: Ref and Asc

Let me therefore turn to another implementation of the proposal that likewise lets us avoid the problems associated with Strict Denotationalism, but that also, as I will explain below, promises to give us a cleaner way of handling the type ambiguity of (at least some) descriptions. By way of a bit of motivation, consider that when using a predicative expression, one does not, intuitively, seem to mention, 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 caveat, 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, really *refer* to things. Predicative expressions, we might continue, rather 'express' or 'ascribe' things (specifically, properties).[22]

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[22] Moving forward, I will use the terminology of ascribing rather than expressing, albeit with some hesitation: ascription is naturally understood as a three-place relation (*x* ascribes *y* to *z*), whereas it is here meant to be a two-place relation (between a word and a property). 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 Liebesman (2015), Hale and Wright (2012), Rosefeldt (2008), Burge (2007), MacBride (2006), Künne (2003), Wright (1998), Etchemendy (1999), Strawson (1987), Dudman (1972), and Searle (1969). The terminology of ascription is also employed by Searle (1969), Wright (1998), Hale and Wright (2012), and Liebesman (2015). See §5.1 below for discussion of the way the present proposal relates to that of Wright (1998) and Liebesman (2015).

  This suggests that we could construe the distinction between N-type 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, of course, retain an umbrella notion of denotation: to say that a given expression *denotes* some item (or has it 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 point, at any rate, is 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.

  The distinction between predicational and equative sentences, we will now say, involves a difference in the semantic relation used to interpret the post-copular expression: whereas equative sentences involve a referential expression in post-copular position, predicational sentences involve an ascriptive expression in post-copular position. The semantic principles governing copular sentences would now look as follows:

> **Equative**: ⌜α is β⌝ admits of an equative interpretation iff α is in the domain of Ref($\cdot$) and β is in the domain of Ref($\cdot$). In that case ⌜α is β⌝ is true iff Ref(α) is identical to Ref(β).

> **Predicational**: ⌜α is β⌝ admits of a predicational interpretation iff α is in the domain of Ref($\cdot$) and β is in the domain of Asc($\cdot$). In that case ⌜α is β⌝ is true iff Ref(α) instantiates Asc(β).

This will again let us explain our substitution failure while holding on to the view that 'happy' and 'the property of being happy' are both semantically related to the property of being happy. In 'Oscar is happy', the post-copular expression functions to *ascribe* the property of being happy, and the sentence is true just in case Oscar has that property. On the other hand, in 'Oscar is the property of being happy', the post-copular expression functions to *refer to* the property of being happy, and the sentence is false, because Oscar is not identical to that property.

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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 could now say, differ not in terms of what they quantify over, but in terms of the semantic relation that the bound variables bear to their values: both involve quantification over properties, but whereas nominal quantifiers bind referential variables, predicative quantifiers bind ascriptive variables. That is not to say that there is not 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 relations involved in the two cases do place different demands on the composition of the domain. The domain of nominal quantification can include anything there is (including properties), since anything there is is fit to be referred to. The domain of predicative quantification, on the other hand, includes only the kinds of things that are fit to be ascribed, that is, properties. It is this semantic role of being ascribed that sets properties apart from particulars like Oscar and Alice.[23]

Finally, consider again the matter of the type ambiguity of definite descriptions like 'the mayor of Oakland'. Since we now have different semantic relations at our disposal, we can allow that there is just one expression type, and simply say that type-ambiguous descriptions 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). The occurrence of the description in 'Alice is the mayor of Oakland' can then be interpreted either referentially (corresponding to an equative reading of the sentence) or ascriptively (corresponding to a predicational reading).[24] Since our two semantic relations simultaneously encode both semantic-type-like information

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[23] The claim that the domain of nominal quantification may contain *anything* there is is not 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 will not take up here.

[24] Let me here also return to the example mentioned in note 18 above: 'Oscar is the property all musicians most want to have'. A referential reading of the description would refer to the property all musicians most want to have, and a predicative reading would, following our recipe, ascribe the property of being identical to this property. We therefore predict that the sentence has no reading on which it says that Oscar instantiates the property all musicians most want to have.

and denotation-like information, we can allow that we are dealing with a single expression type while also avoiding the possibility of type–denotation mismatch: 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 of our proposal, in terms of different semantic relations, thus establishes a tighter connection between semantic type and semantic value than the first implementation did. So although our two implementations offer similar explanations of our substitution failure, the second implementation looks as if it enjoys an advantage when it comes to the treatment of type-ambiguous descriptions.[25]

4.3 Semantic relations generalized

Before we continue, let me sketch one way in which one might extend the semantic relations view to a more complete account of the semantics of English. An appealing feature of the Fregean approach to natural language semantics is that it offers a remarkably uniform account of semantic composition in terms of functional application.[26] Take, for example, the sentence 'Oscar is happy'. Prescinding for the moment from the difficulties the Fregean encounters, the thought is that 'happy' denotes a function of type $\langle e,t \rangle$ (a concept), and that 'Oscar' denotes something of type e (an object). The semantic value of the sentence as a whole is then computed by applying the function denoted by the predicate to the object denoted by the subject term. So 'Oscar is happy' denotes 1 (or the True) just in case applying the $\langle e,t \rangle$-type function denoted by 'happy' to Oscar yields 1 (or the True). Similarly for a relational sentence like 'Oscar loves Alice'. The Fregean could say that 'loves' denotes a function of type $\langle e,\langle e,t \rangle \rangle$, and that 'Oscar' and 'Alice' denote items of type e. So 'loves Alice' denotes the $\langle e,t \rangle$-type function that results from applying the $\langle e,\langle e,t \rangle \rangle$-type function denoted by 'loves' to Alice, and the sentence as a whole denotes 1 just in case applying this $\langle e,t \rangle$-type function Oscar yields 1. This uniform appeal to functional application is, as I said, an appealing feature of the Fregean view. I want to suggest that a similar effect

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[25] See Rieppel (2013b) for further discussion about the type ambiguity of definite descriptions, and the potential advantages an appeal to distinct semantic relations may offer us here.

[26] See Heim and Kratzer (1998) for a broadly Fregean semantics in this spirit. They call the thesis that semantic composition involves functional application 'Frege's Conjecture'. Thanks to two referees for recommending that I explore the questions addressed in this section.

can be achieved in terms of semantic relations. What follows is, to be sure, not the only way to pursue the semantic relations view, but it does represent one natural extension of it.

Suppose we take it that properties are functions from objects—that is, anything capable of being referred to—to truth-values. To say that a given object instantiates a certain property would, on this view, amount to saying that the relevant function yields 1 when applied to that object. Similarly, we might take it that relations are functions from objects to properties. Thus, for example, the relation of loving will yield the property of loving Alice when applied to Alice, and the relation of identity will yield the property of being identical to Alice when applied to Alice.

Next, let us extend our inventory of semantic relations and adopt a convenient notation for them. The reference function $\mathrm{Ref}(\cdot)$ can be represented as $[\![\cdot]\!]_N$, and the ascription function $\mathrm{Asc}(\cdot)$ as $[\![\cdot]\!]_{\langle N,S\rangle}$. The semantic function that maps sentences to their semantic values can be represented as $[\![\cdot]\!]_S$, and the semantic function that maps relational expressions to their semantic values can be represented as $[\![\cdot]\!]_{\langle N,\langle N,S\rangle\rangle}$. The semantic function that a given phrase is in the domain of will be determined by the semantic functions that its constituents are in the domain of. So, for example, a phrase that has constituents β and γ that are respectively in the domain of $[\![\cdot]\!]_{\langle N,S\rangle}$ and $[\![\cdot]\!]_N$ will be in the domain of $[\![\cdot]\!]_S$. We then offer the following analogue of the Fregean's compositional principle in terms of functional application:

> **Composition**: If α is a branching node with daughters β and γ, and β is in the domain of $[\![\cdot]\!]_{\langle X,Y\rangle}$ and γ is in the domain of $[\![\cdot]\!]_X$, then α is in the domain of $[\![\cdot]\!]_Y$ and $[\![\alpha]\!]_Y = [\![\beta]\!]_{\langle X,Y\rangle}([\![\gamma]\!]_X)$.

To get a sense of how such a semantics would operate, let us apply it to the pair of sentences involved in our substitution failure. For concreteness, I will now assume that English has two forms of 'be': a semantically vacuous 'is' of predication, and an 'is' of identity, for which I will use 'is$_=$'. Suppose we have the following semantic values:

$[\![\mathrm{Oscar}]\!]_N = \mathrm{Oscar}$

$[\![\mathrm{happy}]\!]_{\langle N,S\rangle} = \lambda x[x \text{ is happy}]$

$[\![\text{the property of being happy}]\!]_N = \lambda x[x \text{ is happy}]$

$[\![\mathrm{is}_=]\!]_{\langle N,\langle N,S\rangle\rangle} = \lambda x \lambda y[y = x]$

For 'Oscar is happy' we then derive the following truth conditions:

$[\![\text{Oscar is happy}]\!]_S =$

$[\![\text{happy}]\!]_{\langle N,S\rangle}([\![\text{Oscar}]\!]_N) =$

$\lambda x[x \text{ is happy}](\text{Oscar}) =$

1 iff Oscar is happy

'Oscar is the property of being happy', on the other hand, receives the following truth conditions:

$[\![\text{Oscar is}_= \text{ the property of being happy}]\!]_S =$

$([\![\text{is}_=]\!]_{\langle N,\langle N,S\rangle\rangle}([\![\text{the property of being happy}]\!]_N))([\![\text{Oscar}]\!]_N =$

$(\lambda x \lambda y[y = x](\lambda x[x \text{ is happy}]))(\text{Oscar}) =$

$\lambda y[y = \lambda x[x \text{ is happy}]](\text{Oscar}) =$

1 iff Oscar $= \lambda x[x \text{ is happy}]$

Again, I only intend this as a sketch for how such a semantics might look. Much more would have to be done to flesh it out and apply it to larger fragments of English. Nor is this the only way to incorporate the distinction between reference and ascription into a broader semantic theory. I have, in particular, not offered arguments to support the introduction of further semantic relations beyond reference and ascription.[27] Nevertheless, the proposal does strike me as one natural way to extend the distinction between reference and ascription while also incorporating at least some of the features that make the Fregean approach attractive.

5. More on reference and ascription

As already noted (see note 2 above), the idea that predicates differ from nominal expressions not in terms of the kinds of things they denote but in terms of the semantic relation they bear to their semantic values has been suggested by others as well, perhaps most notably by Wright (1998) and Liebesman (2015). Let me therefore say something about how the line of argument I have pursued here connects with Wright's and Liebesman's proposals.

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[27] Something along the lines of the present proposal (involving further semantic relations beyond reference and ascription) is hinted at in Hale and Wright (2012). See Liebesman (2015) for a different proposal.

5.1 Wright on ascription

Wright's (1998) discussion is carried out in terms of what I have been calling the 'austere' view of predicates, according to which only verb phrases—that is to say, copula-including phrases in the case of copular sentences—count as genuine predicates. Given that starting point, the view that predicates denote properties is understood as the view that, for example, the copula-including phrase 'is happy' denotes the property of being happy. The difficulty with the property-based view is then thought to emerge from substitution failures like the following:

(18) (a) Oscar [is happy].

(b) Oscar [the property of being happy].

where substitution of a property-denoting description for an (austerely conceived) predicate results in an ungrammatical or, as it is sometimes put, 'list-like' string. The reason the naive property-based view fails qua semantic theory, it is then argued, is that it does not explain why the substitution of co-denoting expressions should take us from something that is grammatical (and true) to something ungrammatical (and thus not even truth-evaluable).

This line of argument fails to convince, however. After all, both semantics *and* syntax need to be in order to achieve grammaticality, and ungrammaticality can result from a breakdown on either side. To draw specifically semantic conclusions—in this case, that the naive property-based view has to be abandoned in favour of a more sophisticated view that draws a distinction between reference and ascription—on the basis of ungrammaticality is not warranted. When confronted with the above substitution failure, it is open to a proponent of the naive property-based view to insist (plausibly, I think) that the ungrammaticality of the string that results from the substitution is simply due to the fact that English syntax requires a copula. If the copula is omitted, we do indeed get an ungrammatical string, but this does nothing to put pressure on the naive view that predicates (whether austerely conceived or not) simply denote properties. Oliver (2005), for example, criticizes Wright on these grounds. Wright's (1998) Reference Principle—according to which the substitution of co-denoting (or co-referring) expressions must *inter alia* preserve grammaticality—is implausibly strong, leaving the impact of syntax on grammaticality out of account. 'Philosophers of language', Oliver (2005, p. 184) laments, 'commonly underestimate the complexity of English syntax'.

The arguments I have put forward in this paper respond to that charge. The substitution failure that I have sought to address involves two perfectly grammatical sentences. What requires explanation is that the two sentences differ in their truth conditions. Of course, even here, we had to consider whether a partially syntactic explanation might be available. But I hope to have convinced the reader that, in this case, the syntactic escape route is barred, and that the distinction between reference and ascription therefore fulfils a genuine explanatory need. Furthermore, the type ambiguity of definite descriptions which we encountered in the course of investigating the syntactic proposal may also, as I argued in the previous section, provide reasons for preferring an approach that appeals to distinct semantic relations over other alternatives.

The distinction between reference and ascription itself (rather than just the road to it) has also come under fire, however. One worry is that, as MacBride (2006, p. 466) 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 distinct from reference, is obscure by comparison. Wright (1998) 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. (Wright 1998, p. 260)

MacBride (2006, p. 467) 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 is not a *sui generis* relation on a par with reference.

I want to say two 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 'ordinary' notion of reference against which ascription fails to hold up. The charge seems to be that we have a firm grip on a general semantic relation—I have been calling it 'denotation' and

the objector calls it 'reference'—which holds between both nominal and predicative expressions and their semantic values, but that we have no equally firm grip on a more restricted semantic relation which only holds between predicative expressions and their semantic values. I am not at all sure this is right. People are often reluctant to speak of predicates as *referring* to properties, preferring to reserve that notion for nominal (or *N*-type) expressions. This suggests that we are, even pre-theoretically, rather comfortable with the idea that predicates bear a distinctive semantic relation to properties. Furthermore, I find the insistence that we ought to have an absolutely firm *pre*-theoretic understanding of the relevant notion somewhat misplaced. I would suggest that we are apt to gain a fuller understanding of ascription, as well as of reference (in our 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 predicational and equative copular 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.[28] Further investigation may show that there is yet further work for them to do.[29]

Second, MacBride's charge that ascription is ultimately a composite relation, to be partially understood in terms of 'reference' (or 'denotation', as I have called it), can in the present context perhaps best be understood as the claim that ascription—as well as the restricted notion of reference I have appealed to, I presume—should be 'factored' into two separate components, represented by Den and Typ, as on the first implementation of our proposal. To say that α 'ascribes' x, on this view, just amounts to the conjunctive claim that α is of type $\langle N,S \rangle$ and α denotes x. This, however, just looks like an insistence that

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[28] A referee notes that one might mount a similar defence of the notion of denotation$_p$ we encountered in the course of evaluating the Fregean proposal. There are, however, important differences between 'ascribes' and 'denotes$_p$'. The latter is an utterly unfamiliar kind of expression, taking an *N*-type expression in subject position and an $\langle N,S \rangle$-type expression in 'direct object' position. Hence the worry about intelligibility. 'Ascribes', on the other hand, is grammatically speaking in order. It has the same grammatical structure as 'refers', since both are transitive verbs that take *N*-type expressions in their two argument places. Where they differ is in the relations they express, ascription being more restrictive than reference in the kinds of entities it relates words to (on both MacBride's broad and our narrow conception of reference). This is one reason why I think that if we are going to appeal to distinct semantic relations anyhow, it is preferable to go in for ascription than denotation$_p$.

[29] Liebesman (2015) argues for such further applications.

the first implementation of our proposal is to be preferred over the second. A friend of ascription will turn the tables, and hold that the general notion of denotation is to be understood disjunctively, in terms of the more restricted notions of reference and ascription: to say that α 'denotes' x is to say that α either refers to x or ascribes x. Similarly, the notion of semantic type will be spelled out using semantic relations: an expression has type N if it is interpreted as referring to something, and type $\langle N,S \rangle$ if it is interpreted as ascribing something. 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 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 favour of the second implementation over the first. It is, at any rate, on the basis of considerations of this kind that, I think, this matter ought to be adjudicated.

A final worry, stressed by Hale and Wright (2012), concerns whether a proposal that relies on a distinction between reference and ascription can vindicate the Syntactic Priority Thesis that insists on 'the priority of logico-syntactic over ontological categories'. One thing to stress with regard to this worry is that the distinction between N-type and $\langle N,S \rangle$-type expressions—which we are proposing to delineate in terms of reference and ascription—is, as we have seen, not syntactic in character, since expressions of a single syntactic category (namely, definite descriptions) are capable of playing either role. So on the proposal put forward here, there can be no question of characterizing the ontological distinction between objects and properties in specifically *syntactic* terms. We can, however, characterize it in semantic terms: properties are things capable of being ascribed, whereas objects are things capable of being referred to. Objects in a narrower sense (particulars, or non-properties) are things that are *only* capable of being referred to.

Whether this characterization lives up to the ambitions behind the Priority Thesis will in part depend on whether our grasp of the notions of reference and ascription is sufficiently independent of our grasp of the notions of object and property. And that is certainly open to question. As I have said, I tend to think that reference and ascription ought in part to be understood in terms of the overall role they play in our semantic theory. If we want to identify something for which priority can be claimed, the place to look may be the distinction between equative and predicational copular sentences. This is a

distinction that we, as competent speakers, have a reasonably firm handle on, as demonstrated by our predicativity tests. And it is in the context of this distinction that the notions of reference and ascription, as well as the associated notions of object and property, play a distinctive role.

Finally, it is not as if vindication of the Priority Thesis has to be accepted as a constraint on any semantic proposal that seeks to draw a distinction between reference and ascription, and it has not been my aim to vindicate it. There is a somewhat more modest view about the connection between semantics and ontology that I am inclined to accept, however, namely, (i) that anything which deserves to be called a property ought to play a role in the semantics of predicational sentences, (ii) that we will not have a complete picture of what is distinctive of properties absent an account of what that role is, and (iii) that any such account must deal with the substitution failure with which we began. Our proposal involving reference and ascription does live up to this more modest, but by no means trivial, demand. To ask for more may be to ask for more than we can get.

5.2 Liebesman on ascription

Another philosopher to have recently weighed in in support of a distinction between reference and ascription is Liebesman (2015). Though there is much in his discussion with which I am in agreement, here I want to highlight an important point of disagreement.

According to Liebesman, ascription should be understood as a *triadic* relation between an occurrence of a predicate, a property, and an object. The occurrence of 'wise' in

(19) Frege is wise,

for example, ascribes the property of being wise to Frege. By contrast, I have been treating ascription as a dyadic relation between predicates and properties. Liebesman argues that a triadic ascription relation is needed to resolve what Davidson (2005) has called the Problem of Predication.[30] I shall argue for two points. First, that Davidson's

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[30] Liebesman refers to it as the 'regress problem'. The problem is also hinted at in the opening passages of Davidson (1967). As Burge (2007) emphasizes, Davidson is often not careful enough about distinguishing the semantic from the metaphysical version of the Problem of Predication, where the metaphysical version involves a worry roughly along the lines of Bradley's regress. I will focus here on the semantic version of the problem. I should say that Liebesman holds that the triadicity of ascription will also serve to resolve the problem of the 'unity of the proposition'. I find the unity problem—in so far as it is differs from the

Problem of Predication can be resolved without resorting to a triadic ascription relation. And second, that treating ascription as triadic generates problems with constructions in which predicates do not occur in combination with any referring expression.

The Problem of Predication, Davidson tells us, is a problem about explaining 'what is required of a sentence if it is to be true or false' (2005, p. 86). Though Davidson offers various statements of the problem, one particularly helpful description of it 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. (Davidson 2005, p. 113)

The problem, as I understand it, arises if one takes it that assigning entities as the semantic values of the various expressions occurring in a sentence provides an exhaustive account of the semantics of 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 truth-evaluable, has not been touched on. The sentence looks as though it is just a syntactic configuration of expressions, each of which individually denotes 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 has not been solved. Furthermore, a regress arises if one attempts to overcome this problem by identifying some further expression (or other component) in the sentence that is to denote a certain relation (such as instantiation) holding between the entities denoted by the remaining expressions in the sentence. This clearly does not overcome the problem, because the sentence still looks like a mere configuration of expressions, each of which denotes a certain entity, one of those entities now being the relation of instantiation. We have thus got no closer to explaining how the sentence receives truth conditions.

Problem of Predication—rather elusive. I will not attempt to either motivate or resolve that problem here.

Davidson's preferred solution to the problem is to abandon the idea that predicates denote entities at all. Instead, each predicate is subject to a syncategorematic treatment, via a clause that directly specifies the conditions under which any sentence containing that predicate is true. The truth-conditional contribution of 'pretty', for example, is given by a clause which tells us that for any term α, a sentence of the form $\ulcorner\alpha$ is pretty$\urcorner$ is true iff the denotation of α is pretty. On this view, only *N*-type expressions have the function of denoting entities. Predicates do not denote things, but are rather subject to this kind of compositional clause. In an important sense, the predicate 'pretty' itself is not given any 'independent' semantic function at all (hence the label 'syncategorematic'). It is only complete sentences of the form $\ulcorner\alpha$ is pretty$\urcorner$, 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.[31] The demand that we specify what is required of a sentence if it is to be true or false is, in this way, met.

Liebesman (2015) argues that we can solve the Problem of Predication while continuing to hold that predicates are semantically related to entities (specifically, properties) by appealing to a triadic relation of ascription. The occurrence of 'pretty' in, for example,

(20) Sally is pretty

ascribes the property of being pretty to Sally. Davidson might try to raise his regress worry by inquiring what part of the sentence denotes the ascription relation. That worry is clearly misguided, however: 'the ascription relation is not designated by any constituent of (20). Rather, the relation is the *way* that ["pretty"] designates' (Liebesman 2015, p. 551). But has the problem been solved? The proposal does perhaps serve to distinguish the sentence 'Sally is pretty' from a mere configuration of words that individually denote Sally and the property of being pretty—in the sentence the property is ascribed to Sally. But the Problem of Predication demands that we explain how sentences come to have truth conditions. Merely saying that the occurrence of 'pretty' in (20) ascribes the property of being pretty to Sally does not yet answer *that* question. More is needed. We also need to say that (20) is true just in case Sally has the property that 'pretty'

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[31] Compare also Davidson's (1967) discussion of 'the father of'. Here he suggests that rather than take this expression to denote a function, we instead subject it to a syncategorematic clause of the following sort: Den($\ulcorner$the father of $\alpha\urcorner$) = the father of Den(α).

ascribes to her, or indeed that any predicational sentence of the form
⌜α is β⌝ is true just in case the entity denoted by α has (instantiates)
the property β ascribes to it. What we need, in other words, besides
the triadic ascription relation, is a principle of semantic composition
that tells us how to determine the truth conditions of the sentence on
the basis of the semantic contributions of its parts.[32]

The point that Davidson's Problem of Predication brings into
focus—though the same kind of point has also been made by Sellars
(1962) and Furth (1993)—is that no mere assignment of semantic
values to words, no matter how elaborate, will yield a specification
of the truth conditions of complete sentences. Any semantics must
also come equipped with compositional principles that tell us how the
meanings of larger constituents are determined on the basis of the
meanings of their parts. Davidson's own proposal, on which there is a
separate compositional clause for every predicate, is one way of meet-
ing that requirement, albeit in a rather piecemeal fashion. But it is
certainly not true, *pace* Davidson, that views according to which predi-
cates are semantically related to properties cannot also meet that re-
quirement. Crucially, however, such views do not need to appeal to a
triadic ascription relation. What does the work of resolving the
Problem of Predication—on Davidson's and Liebesman's views
alike—is the involvement of compositional principles. And such prin-
ciples can be formulated just as well in terms of a dyadic relation of
denotation, or ascription, as the case may be.

The response we will give to the challenge Davidson poses in the
passage quoted above is as follows. 'Sally', we will say, refers to Sally,
and 'pretty' ascribes the property of being pretty. This raises the ques-
tion of how to explain the fact that 'Sally is pretty' is not just a con-
figuration of expressions semantically related to certain entities, but
rather the sort of thing that has truth conditions. We cannot, as
Davidson points out, answer this question by saying that the copula
'is' denotes the relation of instantiation, since that will simply make
the sentence appear like 'a triple of designators'. The correct answer is
that our semantics also contains compositional principles, which tell
us, for example, that a predicational sentence ⌜α is β⌝ is true just in

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[32] I do not want to suggest that Liebesman thinks the triadic relation of ascription marks
the end of the matter. He writes that 'the triadicity of ascription … *gives rise to* relations
between the sub-sentential expressions … and the designata of those sub-sentential expres-
sions … [and] these relations *give rise to* the truth-aptness of the sentence' (Liebesman 2015,
p. 551; emphasis added). My point is to emphasize that compositional principles of one stripe
or another are ultimately crucial to resolving the Problem of Predication.

case the entity referred to by α instantiates the entity (property) ascribed by β. If Davidson insists on asking what part of the sentence denotes the relation of instantiation, we point out that the question is ill-posed: there is not just denotation (or reference, or ascription), but also composition, and the relation of instantiation is not denoted by anything, but rather figures in our compositional principle.[33]

So much for the Problem of Predication. Let me now turn to my second reservation about Liebesman's proposal. Triadic ascription, as we have seen, is a relation between a predicative occurrence of an expression, a property, and the argument of the predicate, where this is the entity referred to by the argument term with which the predicate combines. The trouble is that predicative expressions can occur in contexts where they do not occur in combination with any referring term, and thus have no argument. Consider the predicate 'ancient', for example. It can occur as a constituent of the complex predicate 'ancient papyrus'. Here it does not have any argument, and so does not ascribe a property *to* anything. It might be suggested that it does function to ascribe a property to something once the complex predicate is embedded in a complete sentence, like 'The Book of the Dead is an ancient papyrus'. But consider that we can also embed the complex predicate in a sentence like 'Every ancient papyrus is valuable' that contains no referring expression. Here none of the predicates occur in combination with an argument term, so none of them have an argument on Liebesman's understanding of that notion, meaning that none of them ascribe a property to anything.

One might respond in one of three ways. First, one could argue that although 'ancient', 'papyrus' and 'valuable' are all *capable* of occurring predicatively, they do not do so in 'Every ancient papyrus is valuable'. Since triadic ascription is only meant to cover predicative occurrences of expressions, it is not meant to apply to such cases. This move should strike us as suspect, however, particularly in the case of 'valuable'. Furthermore, one would like to be told what semantic function the expressions *do* play in this sentence, given that it is not that of ascribing a property to something. A second option would be to revise the notion of argument so that a predicate need not occur in combination with a referring expression in order to count as having an argument. I will not speculate on what the alternative notion might

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[33] The dialectic could continue. Davidson might object that the statement of truth conditions we deliver contains a verb ('instantiates') not found in the object language sentence. See, for example, Davidson's (2005, p. 158) misgivings about 'is a member of'. I will not pursue this issue further here, though I discuss and respond to the concern in Rieppel (2013a).

look like, since I am not convinced that saving the triadicity of ascription is worth the extra complications. A third and final option would be just to abandon the triadic ascription relation in favour of a dyadic variant, at least in cases like these. Indeed, Liebesman (2015) does appeal to a dyadic relation—which he calls 'disposition-to-ascribe', or 'dasc' for short—when it comes to the task of offering a semantic theory. But one now wonders why we should traffic in the triadic relation at all, given that it does not appear well suited to various semantic tasks and does not, as we have seen, appear to play a crucial role in resolving Davidson's Problem of Predication. I therefore conclude that the project of introducing distinct semantic relations is better pursued by way of a dyadic ascription relation.[34]

Although here I have emphasized a point of difference between my proposal and that put forward by Liebesman (2015), this should not overshadow the points of convergence. We pursue different argumentative strategies, but the commonality in upshot—namely, that it is advisable to countenance more than one semantic relation—is one I welcome. At a certain level of abstraction, the strategy Liebesman pursues begins by emphasizing the close semantic connection between predicates and their nominalizations. The distinction between reference and ascription is then put forward as a way to capture that connection in particularly straightforward terms: it is, as Liebesman nicely puts it, a case of 'relation swapping'. I, on the other hand, began by noting the way in which predicates and nominal property-expressions, despite their intuitive connection, nevertheless differ, as exemplified by the fact that the latter cannot simply be substituted for the former. I further regarded it as pertinent to consider the possibility that this difference might not be so semantically 'deep' as to call for multiple semantic relations rather than the drawing of syntactic distinctions. But again, I think the arguments are complementary. I hope that together they may encourage others to get on board with the reference–ascription distinction.

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[34] Of course, none of this is to deny that the verb 'ascribes', in its ordinary use, is ditransitive. I use the terminology of ascription because there are relevant precedents in the literature, but the label does not matter. The ordinary notion of ascription is used to describe *acts* performed by speakers—if I assertively utter the sentence 'Sally is pretty', I ascribe the property of being pretty to Sally. But as Liebesman (2015) emphasizes, he is not offering an analysis of predicational acts, but putting forward a thesis about the semantics of predicates, as I am also. Searle (1969) tends to use 'ascribes' in a way that seems more closely linked to predicational acts.

6. Ontological commitment

I want to conclude by briefly addressing an issue that has so far re-
mained in the background, namely, that of ontological commitment.
There are of course many questions one can ask about ontological
commitment. What I want to do here is to look at one particular
debate about the relationship between quantification and ontological
commitment on which, I think, our proposal about reference and
ascription has a bearing.

To begin where these things so often do, recall that in 'On What
There Is', Quine (1948) famously proposed that 'to be is to be the
value of a variable': we ontologically commit ourselves to the things
quantified over in the sentences we accept. In that paper, he claims
that the use of a predicate does not involve us in ontological commit-
ment to properties, or to anything else. Matters change, however,
according to Quine, if we proceed to *quantify* into the position of
predicates: 'to put the predicate letter "F" in a quantifier', he writes,
'is to treat predicate positions suddenly as name positions, and hence
to treat predicates as names of entities of some sort' (Quine 1970,
p. 67).[35] Quine therefore concludes that since predicates are *not*
names, and since quantifying into predicate position would (he
claims) amount to taking it that predicates *are* names of entities of
some sort, quantification into predicate position is illegitimate.

Prior (1971a) rightly objected to this Nominalization Thesis of
Quine's, and his attendant rejection of quantification into predicate
position. What Prior saw, and Quine apparently failed to see, or
refused to accept, was that natural language does not restrict us to
the kind of nominal quantifiers Quine focused on, but puts various
kinds of non-nominal quantifiers at our disposal as well. Thus, for
instance, he 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

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[35] Quine repeats this point on various occasions. Earlier in the same work, he writes that
'there are those who use so-called predicate variables in predicate position and in quantifiers,
writing things like "∃*F Fx*". The values of these variables are attributes; the constants substi-
tutable 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' (Quine 1970, p.28). Similarly, in Quine (1953a, p. 113): '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
[(∃*x*)(*x* is a dog ∧ *x* is white)] as "(∃*x*)(*Fx* ∧ *Gx*)" we think of 'F' and 'G' as bindable class
variables'.

treading on his toe"', and more to the present point, that in 'He is something that I am not—kind', the quantifier 'is quite clearly adjectival rather than nominal in force' just like the expression 'kind' into the position of which we are quantifying (Prior 1971a, p. 38). Quine, he complains, has therefore 'provided 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 1971a, p. 43).[36]

More recently, Rayo and Yablo (2001) have picked up on this argument of Prior's, which they formulate as follows:

> Use of a quantifier commits one at most to entities of the kind referred to by the phrases its bound variables stand in for. The phrases non-nominal variables stand in for—phrases like … 'kind'—do not refer at all. So non-nominal quantifiers carry no commitments. (Rayo and Yablo 2001, p. 81)

Having made this claim about ontological commitment, they conclude that quantification into predicate position does not, therefore, involve quantification over properties. The Priorian argument can be summarized as follows: predicates do not *refer to* properties, so quantification into predicate position does not *ontologically commit* us to properties, so predicative quantifiers do not *quantify over* properties.

The proposal I laid out above lets us see both what is right and what is wrong in this line of argument. We can acknowledge that all three parties to this debate are quite right to hold that predicates do indeed fail to *refer* to properties, that is, that they are not *names* of properties, or as Rayo and Yablo (2001, p. 27 n. 6) put it, that they are not 'referential in the way that singular terms are'. The substitution failure we have been looking at gives us good reason sharply to distinguish the semantic function of predicates from that of nominal property-expressions, and referring terms more generally. We can also agree with Prior that quantifying into predicate position does not amount to

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[36] A referee asks what I would want to say about Prior's (1971a) example of 'I hurt him somehow (viz. by treading on his toe)', specifically, whether we should also regard this as involving quantification over something, and as involving a distinctive semantic relation. First, let me say that in this section I am making a negative point: that from the mere fact that a quantifier quantifies into the position of expressions that do not, intuitively, refer, it cannot be concluded that the quantifier *therefore* fails to quantify over something. More broadly, adverbial quantifiers raise questions of their own that would again call for the assessment of various different proposals. That said, if the existence of distinct semantic relations and of quantifiers that, though not nominal, nevertheless quantify over certain things is accepted, then it seems not unnatural to extend the view to adverbial quantifiers (perhaps they quantify over ways of doing something). Indeed, if adverbial phrases express properties of events, then ascription might be the semantic relation in play here as well.

nominalizing predicates and treating them as names of properties, as Quine seems to have thought.

But we can well acknowledge both of these points while at the same time seeing that it is illegitimate to conclude, *on this basis*, that predicative quantifiers therefore fail to quantify over, or ontologically commit us to, properties. The question of whether a quantifier quantifies over certain things is separate from the question of whether the expressions into the position of which it quantifies name or refer to those things. To point out that predicates do not refer to properties in the way nominal property-expressions do does not amount to showing that predicates are not semantically related to properties in a way appropriate to *them*, nor, therefore, that predicative quantifiers fail to quantify over properties, though again, in a way appropriate to them.

Indeed, some of Quine's own remarks hint at this point. Right before concluding that 'variables eligible for quantification … do not belong in predicate position', he writes 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). Quine here countenances the possibility that predicates could be semantically related to properties, without, for all that, naming them. He did not similarly regard it as possible that quantified variables could be semantically related to properties without naming them, because he took it that variables are, by their very nature, nominal. Having rejected Quine's Nominalization Thesis, we need not follow him in this respect, however, but can adopt the same perspective on predicative variables that Quine seems to have been willing to entertain with respect to predicates: a quantifier can quantify over properties (and thus, presumably, ontologically commit us to properties) otherwise than by binding variables that *refer to* properties—it can instead bind variables that *ascribe* properties.[37]

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