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Descriptions: Predicates or Quantifiers?

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In this paper I revisit the main arguments for a predicate analysis of descriptions in order to determine whether they do in fact undermine Russell's theory. I argue that while the arguments without doubt provide powerful evidence against Russell's original theory, it is far from clear that they tell against a quantificational account of descriptions.

A currently popular and not implausible view has it that natural language descriptions are quantifier phrases. This view is commonly attributed to Bertrand Russell, who famously argued that descriptions are restricted existential quantifiers. Hardly anyone believes that Russell got everything exactly right. But many believe that with a few natural repairs here and there, Russell's theory (or something like it) does indeed provide us with a correct analysis of natural language descriptions. There are, however, powerful arguments against Russell's claim that descriptions are quantifiers—if, indeed, the claim is taken to be about natural language. Most well-known are perhaps P. F. Strawson's arguments for the singular-term interpretation of descriptions and Keith Donnellan's arguments for the semantic significance of the referential/attributive distinction.¹ Less attention has been paid to a number of arguments for the view that descriptions are not in fact quantifier phrases, as Russell thought, but predicates.² Two sorts of positions have been taken. Some have argued that descriptions occurring in predicative

¹ For example, Strawson [1950: 320] and Donnellan [1966]. Whether or not Donnellan actually wished to attribute semantic import to the referential/attributive distinction is debatable.

² The attention I am referring to is that of philosophers. Most linguists believe some version of the predicative view is correct.

position should be assimilated to simple predicates.^{3,4} Others have argued that even descriptions in argument position have a predicate-type semantic value.⁵ Evidence for a predicative analysis of descriptions in predicative position comes primarily from two observations. One is that ordinary quantifier phrases, unlike descriptions, seem unable to occur in predicative position. The other is that predicative descriptions seem to fail to give rise to the sorts of scope ambiguities they would give rise to if they were quantifiers. Finally, the main motivation for assimilating descriptions in argument position to predicates is that only a predicative analysis allegedly can accommodate the fact that descriptions seem to take on the quantificational force of higher operators.

In this paper I want to revisit the arguments for the predicative analysis of descriptions in order to determine whether they do in fact undermine Russell's theory. I shall argue that while the arguments without doubt provide powerful evidence against Russell's original theory, it is far from clear that they tell against a quantificational analysis of descriptions. The structure of the paper will be as follows. First, I argue that the scarcity of ordinary quantifiers occurring in predicative position can be explained on pragmatic grounds. Second, I argue that predicative descriptions have precisely the scope-taking properties we should expect if they are quantifiers. Finally, I show that a quantificational account of descriptions in argument position does as well as, and possibly better than, a predicative analysis.

I. Descriptions in Predicative Position

³ I shall call descriptions that occur after the 'to be' verb at the level of surface form 'predicative descriptions' and the position after the 'to be' verb the 'predicative position'. Accordingly, descriptions that occur elsewhere occur in argument position [Graff 2001].

⁴ Strawson, for example, thought that descriptions in different sentential positions play distinct logical roles. On his view, descriptions in argument position are referring expressions, whereas descriptions in predicative position are predicates. Several others have been leaning towards a predicative view of predicative descriptions. See e.g. Geach [1962: §39], Wiggins [1965: 42ff], Kim [1970: 211ff], Smiley [1981], Higginbotham [1987], Doron [1988], Graff [2001], Graff [2006] and Bach [2002: 76ff].

⁵ This idea has been explored by e.g. Lewis [1975], Kamp [1981], Heim [1982: 234ff], Diesing [1992], Koslicki [1999], and Graff [2001].

On Russell's theory, expressions of the form 'an F' are assimilated to expressions of the form 'some F'. Take:

(1) Socrates is a man.

Russell's theory assigns the following (a) logical form and (b) truth conditions to (1):⁶

(1a^R) [an x: man x](Socrates = x)

(1b^R) $\exists x(\text{man } x \ \& \ \text{Socrates} = x)$

A sentence like (2) involving simple predication, on the other hand, is treated as the atomic sentence given in (2a):

(2) Socrates is human.

(2a) human(Socrates)

But it is initially odd that (1) should be structurally different from (2) [Graff 2001; Ostertag 2002]. When we utter (2) we are not saying that something is human and identical to Socrates. Similarly, in the case of (1), we intuitively are not saying that something is a man and identical to Socrates.⁷ So, intuitively, the logical form of (1) should be:

(1a^P) a man(Socrates)

⁶ I shall use a quasi-formal language with restricted quantifiers to represent logical form. For this notation, see Neale [1990] and Graff [2001].

⁷ As various thinkers have pointed out, it is merely because English phrases containing singular common nouns require an article that one cannot say 'Socrates is man'. See e.g. Graff [2001], Ostertag [2002], and Bach [2004, note 21].

A similar, though perhaps less forceful, point can be made about definite descriptions in predicative position. Take:

(3) John is the mayor of Boston

On Russell's analysis, definite descriptions carry semantic implications of uniqueness. So, (3) has the following (a) logical form and (b) truth conditions:

(3a^R) [the x: the mayor of Boston x](John = x)

(3b^R) $\exists x(\text{mayor of Boston } x \ \& \ \forall y(\text{mayor of Boston } y \rightarrow y = x) \ \& \ \text{John} = x)$

(3) thus says that a unique mayor of Boston is identical to John. Here again it may be more natural to think of (3) as affirming that John has a certain property, namely the property of being the mayor of Boston. On the assumption that definites semantically involve uniqueness, 'the mayor of Boston' is true of John just when the predicate 'mayor of Boston' is true of John and of nothing else. So, it is only natural to think that (3) has the following (a) logical form and (b) truth-conditions [Graff 2001; Ostertag 2002]:

(3a^P) the mayor of Boston(John)

(3b^P) mayor of Boston(John) & $\forall y(\text{mayor of Boston } y \rightarrow x = \text{John})$

Note that whether descriptions are treated as predicates or quantifiers makes no truth-conditional difference [Graff 2001]. For if John has F, then he is identical to something that has F. And if John is identical to something that has F, then John himself has F. The same point can be made with respect to definite descriptions. Suppose definites semantically involve uniqueness. Then

the predicate ‘the F’ is true of John just in case ‘F’ is true of John and of nothing else. So, ‘the F’ is true of John just when John is identical to the only thing that has F. The upshot: what prompts the reservations about Russell’s predicative theory is not that it assigns truth-conditions that are at odds with intuition, but rather that it represents natural language descriptions as quantifiers at the level of logical form.

II. Quantifiers in Predicative Position

Russell was, of course, well aware of the problem that sentences with descriptions in predicative position seem structurally similar to sentences involving simple predication. He famously replied by expressing his dissatisfaction with natural language as it is [1919: 172]. As far as Russell was concerned, the ‘to be’ verb can express a subject-predicate relation as well as a relation of identity, even if natural language does not wear this difference on its sleeve.

Predicativists believe that Russell was mistaken about this, at least in the case of descriptions. Descriptions after the ‘to be’ verb, they say, are predicates, not quantifiers. The ‘is’ followed by a description is the ‘is’ of predication. Evidence: descriptions occur in predicative position. Ordinary quantifiers do not [Wilson 1978: 51f; Williams 1983; Doron 1988; Graff 2001]. Take, for instance:

- (4) *John and Mary are *few students*.
- (5) *Bill, Amy and Sue might have been *most singers*.
- (6) *Peg is *any lawyer*.
- (7) *No interview is *some complete failure*.

The result of placing a quantifier in predicative position seems to be ‘mock-grammatical nonsense’—to use George Wilson’s [1978: 52] turn of phrase. But put a description in its place and the result is fine. The reason: descriptions are predicates. Quantifiers are quantifiers. Or so

the predicativists argue. But wait. From the fact (if it is a fact) that quantifiers, unlike descriptions, do not turn up in predicative position, it doesn't follow that descriptions are predicates. Nor does it follow that they aren't quantifiers. We need an argument. Here is one due to Delia Graff [2001: 18]: the 'is' in (4)-(7) cannot be interpreted as the 'is' of identity, and therefore cannot combine with a quantifier ranging over individuals to form a one-place predicate. But it can combine with a description. So, descriptions cannot be quantifiers ranging over individuals.

The argument has some initial appeal. But more needs to be said. For if the 'is' in (4)-(7) combines only with descriptions (and other predicates) because it is the 'is' of predication, then we shouldn't expect it to combine with so-called referring terms either. But it doesn't sound too stilted to say things like 'Peg is *that graduate student I told you about*' or 'Peg is *Superman*'.

Graff [2001: 31] acknowledges that proper names do occur after 'to be' and suggests that we might 'incorporate proper names as yet another type of predicate nominal'.⁸ What about demonstratives? Are we to incorporate them as well? I am not sure how plausible this suggestion is. But it doesn't matter. For there is a further objection that cuts deeper. Quantifiers *do* show up in predicative position, despite initial appearances to the contrary. Consider:

- (8) The person who is joining us later is *someone you know very well*.
- (9) John and Mary are *some students who are unhappy with their grades*.
- (10) The next speaker is not *anyone you have ever heard of*.
- (11) Skim milk was *all they had*.
- (12) Mary's only purchase was *some ancient dictionaries*.

⁸ A predicate nominal is a noun phrase that functions semantically as a predicate. It should be noted here that Tyler Burge and others have given independent reason for thinking that proper names are predicates. See e.g. Burge [1973], Hornsby [1976], and Eluguado [2002].

(8)-(12) seem natural enough. But could it be that the quantifiers here are not really behaving like quantifiers? Could it be, for example, that they are not given their usual quantificational interpretation? No: to say that a quantifier phrase is not given its usual quantificational interpretation is to say that it is used non-literally. For example, ‘some cook’ may be used non-literally to mean ‘a great cook’ (as in ‘Greg could have been some cook’).⁹ But on the preferred interpretation of the sentences in (8)-(12), the quantifiers appear to be used in accordance with their literal meaning. (8), for example, just means: there is some person such that you know that person very well and that person is identical to the person who is joining us later.

Another possibility. The quantifiers in (8)-(12) might perhaps be incorporated as yet another type of predicate nominal.¹⁰ I do not have a know-down argument against this view. But to my mind, this seems like predicativism run amok.¹¹

If the quantifier-predicate distinction doesn’t explain the “mock-grammatical nonsense” in (4)-(7), then what does? Could it be a reflection of pragmatics rather than semantics?¹² This idea is perhaps not as silly as it first appears. Take ‘*John and Mary are few students’. Swap ‘John and Mary’ and ‘few students’. The result: ‘*Few students are John and Mary’. No improvement here. Take ‘*Bill, Amy, and Sue might have been most singers’. Swap ‘Bill, Amy, and Sue’ and ‘most singers’. The result: ‘*Most singers might have been Bill, Amy, and Sue’. Still no improvement. To be sure, there are cases in which the reversed version is acceptable.

⁹ This is noted by Graff [2001: 18]. Graff offers a number of other examples where a quantifier phrase occurs in predicate position; she argues convincingly that the predicate nominal in these examples either are given a non-standard interpretation or fail to function as a semantic unit. Her examples include ‘John’s house has been every colour’ and ‘John is everything I despise’.

¹⁰ Graff [2001: n. 15] notes that partitive constructions like ‘John, Paul, Ringo, and George are all of the musicians’ do seem able to occur in predicative position. She says that she is ‘not sure what to make of it’, but suggests that we might take partitives to be predicates or to involve higher-order quantification.

¹¹ In her commentary on an earlier version of this paper Graff argues that so-called numerical quantifier phrases like ‘two men’, and one-word quantifier phrases like ‘someone’ and ‘nothing’ function semantically as predicates. See also Graff [2006]. She says that she does not know what to say about cases like (11). But if she is right, then we might need to re-think the semantics of predicative noun phrases. It might be that noun phrases in predicate position are generalized quantifiers by default, but shift into expressions with a predicate-type semantic value in predicative contexts. See Partee [1986].

¹² Ostertag [2002] takes this line. Another plausible explanation is that predicative quantifier phrases and descriptions are generalized quantifiers by default, but shift to different semantic types when they occur in predicative position. See the previous note.

For example, ‘The winner of a teaching award is each speaker’ seems awkward, but the reversed version ‘Each speaker is the winner of a teaching award’ is impeccable. But I suspect that in each such case the asymmetry can be explained on other grounds. Let me try. Information structure may affect interpretation. Because ‘each speaker’ precedes ‘the winner of a teaching award’ in the case of ‘Each speaker is the winner of a teaching award’, ‘the winner of a teaching award’ is given a quantificational reading, and so behaves just like other quantifiers with ordinary scope-taking properties. However, because identity is not one-many, a narrow scope reading is preferred. In the case of ‘The winner of a teaching award is each speaker’, on the other hand, the order of the arguments is reversed. Because ‘the winner of a teaching award’ precedes ‘each speaker’, ‘the winner of a teaching award’ is likely to be used specifically [Fodor and Sag 1982].¹³ The sentence is therefore naturally read as making the metaphysically suspect claim that a particular winner is identical to each speaker.

III. The Argument from Scope

There is another reason for thinking that predicative descriptions are better treated as predicates: descriptions do not seem to give rise to the sorts of scope ambiguities that they would give rise to if they were quantifiers [Wilson 1978: 51f; Higginbotham 1987; Graff 2001]. Quantifiers may, familiarly, take wide as well as narrow scope with respect to other operators. This is illustrated in (13):

(13) John didn’t talk to some philosopher.

(13) can be read in two ways, according as the quantifier is given (a) narrow or (b) wide scope with respect to negation:

¹³ Compare ‘Each student is someone I can trust’ vs. ‘Someone I can trust is each student’.

(13a) $\neg[\exists x: \text{philosopher } x](\text{John talked to } x)$

(13b) $[\exists x: \text{philosopher } x](\neg\text{John talked to } x)$

(13a) says that it is not the case that there is some philosopher which John talked to, hence that John didn't talk to any philosopher. (13b) says that there is some philosopher which John didn't talk to.

But consider now a sentence with a description in predicative position:

(14) John is not a philosopher.

Russell's theory predicts that (14) is structurally just like (13) and should have a reading according to which there is a philosopher that is not identical to John. But this is not a possible interpretation of (14), which can only mean that John is not identical to any philosopher.

Indefinite descriptions in predicative position thus seem to be narrow-scope takers. Prima facie, this is odd if they are quantifiers. In the case of definite descriptions the evidence is less swaying. However, Graff [2001: 12] has argued that Russell's theory makes wrong predictions even with respect to definite descriptions. Russell's theory predicts—mistakenly in Graff's view—that (15a) is a possible reading of (15):¹⁴

(15) John is not the owner.

(15a) $[\text{the } x: \text{owner } x](\neg\text{John} = x)$

Graff [2001: 12] admits that the evidence against a wide-scope reading is not as strong here as in the case of indefinite descriptions. However, she argues convincingly that the felt entailment of

¹⁴ Graff [2001: note 18] and [2006] presupposes that some version of quantifier domain restriction is correct and can be adapted to the case of predicative definite descriptions. For a defense of the restriction strategy, see e.g. Stanley and Szabo [2000].

ownership by someone other than John can be accounted for pragmatically. She assimilates (15) to ‘John doesn’t own it’, which may give rise to the implicature that the thing in question has an owner, but which clearly doesn’t semantically entail anything of that sort.

The predicativists think the fact that predicative descriptions lack ordinary scope-taking properties provides evidence for the predicative view: predicates are not the sorts of expressions that have scope, and so if descriptions were predicates, we wouldn’t expect them to move to a position outside the scope of other operators.

The argument does not succeed. The argument assumes that we should expect predicative descriptions to take wide scope if they were quantifiers. But this assumption is less than obviously true. Quantifiers may take scope over negation when they occur in argument position. But to show that predicative descriptions do not have the scope-taking properties we should expect if they were quantifiers, it is not enough to show that quantifiers in argument position may take scope over negation. The relevant comparison class is that of existential quantifiers occurring in predicative position. As it turns out, however, existential quantifiers do not take scope over negation when they occur in predicative position. Consider, for instance:

(16) Lisa is not someone you can trust.

(17) Running for mayor is not something John is considering.

(16) cannot be paraphrased as ‘someone you can trust is such that Lisa is not identical to him or her’, for the latter, but not the former, is compatible with ‘Lisa is someone you can trust’.

Likewise, (17) cannot be paraphrased as ‘something John is considering is such that running for mayor is identical to it’, for the latter, but not the former, is compatible with ‘Running for mayor is something John is considering’. It seems, then, that ‘some’ phrases that show up in predicative position must also take only narrow scope with respect to negation. But then predicative descriptions do indeed have the scope-taking properties we should expect if they were quantifiers.

These cases illustrate the fact that scope relations are more delicate than they are often taken to be, especially when negation is involved.¹⁵ Nobody takes the nonambiguity of ‘it just isn’t true that every dog is brown’ to show that ‘every dog’ is not a quantifier. For whatever reason, there seem to be constraints on scope ambiguity, raising the question of whether any such constraints are in effect here.¹⁶

In sum: the two main arguments against treating predicative descriptions as quantifiers are less than fully convincing. Whether predicative descriptions should be treated as quantifiers or predicates remains an open question. However, there is a quite simple way in which to determine whether predicative descriptions should be assimilated to predicates or quantifiers. For it seems fairly obvious that the logical role of descriptions isn’t contingent on their syntactic location. So, if descriptions in argument position should turn out to be predicates, we would have strong methodological reason for favoring a predicative account. However, as we will see, descriptions in argument position are best treated as quantifiers.

IV. Descriptions in Argument Position

The main argument against Russell’s analysis of descriptions in argument position turns on the apparent variable quantificational force of descriptions. Consider, for instance:

(18) *An owner of a Porsche* is usually smug.

(19) *The owner of a Porsche* is usually smug.

(18) can, of course, be read as saying that some owner of a Porsche is smug most of the time.

Likewise, (19) can be read as saying that a unique owner of a Porsche is smug most of the time.

¹⁵ Thanks to an anonymous referee. For discussion see also Neale [2002: 31] and Neale [Forthcoming].

¹⁶ It may be suggested that ‘not’ is a scope island. See e.g., Ludlow [2004]. The idea would be that the quantifier cannot take wide scope over the negation in (16) and (17) for precisely the same reason that it cannot take wide scope over negation in ‘Susan doesn’t always eat lunch’. However, I will not pursue this line here.

But (18) and (19) can also both be read as saying that Porsche owners, in general, are smug most of the time, or that most Porsche owners are smug.¹⁷ It has been argued that sentences like (18) and (19) present an insuperable problem for Russell's theory [Graff 2001: 21]. For on Russell's theory, descriptions do not receive generic force. The only option left for the Russellian is to posit an unwelcome ambiguity in the definite and indefinite articles of descriptions. Or so the argument goes.

If descriptions are treated as predicates, we supposedly avoid positing any ambiguities in the definite and indefinite articles of descriptions. There are (roughly) two sorts of predicative analyses of descriptions in argument position. I shall deal with the first sort of proposal in this section and the second in the next. The first sort of proposal was developed by David Lewis [1975], Hans Kamp [1981] and Irene Heim [1982: 234ff], and is sometimes referred to as 'discourse representation theory' (DRT).¹⁸ DRT departs from more traditional semantic approaches in several ways [Hardt 2003]. First, descriptions introduce predicates with a free variable.¹⁹ Second, anaphoric pronouns are interpreted as the same variable as was introduced by its quantifier antecedent. Third, there is a default (text-wide) existential binding of free variables. However, in the case of conditional and relative clause sentences the variables may be bound by the initial quantifier or an adverb of quantification (Q-adverb). The quantifiers in DRT are thus unselective: they bind every free variable in their scope. DRT predicts that (18) can be read in one of three ways:

¹⁷ (21) can also be read as saying 'Usually, when C, an owner of a Porsche is smug', where C is contextually determined (for example, 'Usually, when my friend throws a party, an owner of a Porsche is smug'). I shall discuss this reading below.

¹⁸ Actually, Lewis merely sets out to show that adverbs of quantification are unselective quantifiers. In contrast, Heim and Kamp proposes to answer the question of how discourse gets interpreted. Their theories differ in the detail, but they both argue that sentences contribute particular pieces of information that together constitute an 'ever-growing' so-called 'discourse representation structure'.

¹⁹ On Heim's view, the main difference between definite and indefinite descriptions is that indefinite descriptions are associated with a novelty condition, whereas definite descriptions are associated with a familiarity condition.

(18a) [Some x, y: y is a Porsche & x owns y](x is often smug)

(18b) [Generally x, y: y is a Porsche & x owns y](x is often smug)

(18c) [Usually x, y: y is a Porsche & x owns y](x is smug)

(18a)-(18c) are true just in case some/nearly every/most assignments of values to x and y that satisfy ‘y is a Porsche’ and ‘x owns y’ satisfy ‘x is often smug’.²⁰ A default existential quantifier binds the free variables in (18a), an implicit Q-adverb binds them in (18b), and an explicit Q-adverb binds them in (18c).

One advantage of the unselective binding approach is that it doesn’t require us to posit an ambiguity in the definite and indefinite articles of descriptions. (18) and (19) can each be read in three different ways. But the descriptions contribute the same constituent on all readings. For example, the indefinite description ‘an owner of a Porsche’ is roughly equivalent to ‘an owner of a Porsche(x)’.

Unfortunately, the unselective binding approach meets with well-known technical difficulties. The main difficulty is the proportion problem [Kadmon 1987]. Consider again (19):

(18) An owner of a Porsche is usually smug.

If ‘usually’ is read as a frequency adverb, (18) means that most Porsche-owners are smug. But DRT renders this reading as follows:

(18c) [Usually x, y: y is a Porsche & x owns y](x is smug)

²⁰ I am here ignoring the fact that generics are better treated as law-like generalizations than as accidental generalizations.

DRT thus incorrectly predicts that (18) is true in the following scenario. Among the ten Porsche-owners, one owns a hundred Porsches and is smug, the other nine own one each and are humble. However, (18) is false in those circumstances.

The problem is that ‘usually’ here quantifies over pairs of Porsches and their owners when in fact it ought to be quantifying over Porsche-owners. Thus, we must apparently modify the DRT analysis in such a way that ‘usually’ behaves as a selective quantifier that binds only the variable associated with ‘Porsche-owners’ in (18).

V. Graff’s Proposal

This leads us to the second sort of proposal, a version of which has been defended by Delia Graff.²¹ Graff follows Lewis, Kamp and Heim in thinking that descriptions in argument position are predicates with a free variable. However, unlike Lewis, Kamp and Heim, she treats adverbs as selective binders. On Graff’s view, the descriptions ‘move out of argument position in the derivation of logical form, leaving behind a variable, and move into the restrictor position [of a restricted quantifier], which then binds the variable left behind as a trace’ [2001: 21]. Graff proposes the following rules to govern descriptions (PNs) in argument position:²²

- | | |
|----------------------|---|
| (LF ₂ PN) | $\phi(\text{PN}) \Rightarrow [\exists x: \text{PN}(x)](\phi x)$ |
| (LF ₃ PN) | $\phi(\text{PN}) \Rightarrow [\text{Gen } x: \text{PN}(x)](\phi x)$ |
| (LF ₄ PN) | $\text{Adv}\phi(\text{PN}) \Rightarrow [\text{Adv } x: \text{PN}(x)](\phi x)$ |

²¹ Similar proposals have been developed by e.g. Kadmon [1987], Chierchia [1992], Chierchia [1995], and H. de Swart [1996]. I shall here discuss only Graff’s version of this proposal.

²² Graff [2001: 28] remarks that while all descriptions can receive generic or existential force, they cannot always receive either in any sentence in which they occur.

‘The gappy restricted quantifiers ‘ $[\exists x: \text{---}(x)]$ ’ and ‘ $[\text{Gen } x: \text{---}(x)]$ ’, says Graff, are ‘not contributed by any of the expressions in the sentence, but rather by the structure itself’ [2001: 21].²³ Presumably, they are unpronounced adverbs of quantification.

As Graff observes, the above rules predict that the description ‘an owner of a Porsche’ in (18) may be moved out of argument position in one of three ways:

(18d) $[\exists x: x \text{ is an owner of a Porsche}](x \text{ is usually smug})$

(18e) $[\text{Gen } x: x \text{ is an owner of a Porsche}](x \text{ is usually smug})$

(18f) $[\text{Usually } x: x \text{ is an owner of a Porsche}](x \text{ is smug})$

From each of these, the description ‘a Porsche’ may be moved out of argument position to yield the following logical forms:

(18g) $[\exists x: [\exists y: y \text{ is a Porsche}](x \text{ is an owner of } y)](x \text{ is usually smug})$

(18h) $[\text{Gen } x: [\exists y: y \text{ is a Porsche}](x \text{ is an owner of } y)](x \text{ is usually smug})$

(18i) $[\text{Usually } x: [\exists y: y \text{ is a Porsche}](x \text{ is an owner of } y)](x \text{ is smug})$

(18g) says that there is an owner of a Porsche who is smug most of the time, (18h) says that in general, if someone owns a Porsche, he is smug most of the time, and (18i) says that in most cases in which someone owns a Porsche, he is smug. Similar results ensue in the case of definite descriptions. On Graff’s [2001: 27] view, (19) gives rise to the following readings:

(19a) $[\exists x: [\exists y: y \text{ is a Porsche}](x \text{ is the owner of } y)](x \text{ is usually smug})$

(19b) $[\text{Gen } x: [\exists y: y \text{ is a Porsche}](x \text{ is the owner of } y)](x \text{ is usually smug})$

²³ Graff does not provide truth-conditions for sentences containing the generic quantifier, but says that the generic quantifier is used to make law-like generalizations [2001: 32].

(19c) [Usually x: $\exists y$: y is a Porsche](x is the owner of y)(x is smug)

(19a) is true just when there is a unique owner of a Porsche who is smug most of the time, because of the implication of uniqueness built into definite descriptions. In (19b) and (19c), the uniqueness of ownership in ‘the owner of a Porsche’ is relativized to particular Porsches.

Graff’s analysis thus predicts that (18) and (19) are ambiguous. But because the descriptions ‘an owner of a Porsche’ and ‘the owner of a Porsche’ contribute the same constituent on all readings, the indefinite and definite articles of descriptions are not ambiguous. Or so Graff argues. But Graff’s analysis fails to deliver what it promises. Take:

(20) The student who procrastinates will fail.

Graff’s analysis predicts that the following is a possible interpretation of (20):

(20a) [Gen x: x is the student who procrastinates](x will fail)

But (20a) is not a possible interpretation of (20) at all. (20a) is equivalent to something like ‘For all x, if x is the only student who procrastinates, then x will fail’. But unlike (20), the latter is true if several students procrastinate but don’t fail’. Arguably, the same problem arises in the case of (19). If most Porsche-owners were humble co-owners, then (19b) and (19c) may be true; yet it would be false that Porsche-owners, in general, are smug most of the time, and false that most Porsche-owners are smug.

Graff must apparently assign the following logical forms to (19) and (20) when these sentences receive a generic reading:

[Gen x: x is *a student* who procrastinates](x will fail)

[Gen x: [$\exists y$: y is a Porsche](x is *an owner* of y)](x is usually smug)

But, then, since the descriptions ‘the student who procrastinates’ and ‘the owner of a Porsche’ are now semantically indefinite, Graff is forced to posit an ambiguity in the definite article.²⁴

There is a second and more pressing difficulty for Graff’s proposal. The Q-adverbs in sentences like (18) and (19) seem to bind selectively. However, there are other cases in which the adverb seems to bind unselectively [Kadmon 1987]. Consider, for instance:

(21) Usually, if a semanticist hears of a good job, she applies for it.

(21) doesn’t seem to involve selective quantification over semanticists. Rather, ‘usually’ seems to quantify over semanticists and jobs simultaneously. However, Graff would be able to account only for the selective reading. So, Graff’s proposal calls for refinement. If descriptions have predicate-type semantic values, then adverbs bind selectively in some contexts, and unselectively in others.

VI. A Quantificational Analysis

The question to which I will now turn is whether the Russellian can do any better with respect to these cases. I believe he can. It is well-known that adverbs of quantification differ from other quantifiers in that they do not syntactically require the appearance of a conditional restrictor.

Consider:

(23) Tai always eats [with chopsticks]_F²⁵

²⁴ In view of these difficulties Graff might be willing to give up the assumption that definite descriptions carry a semantic implication of uniqueness. There may be independent reason for accepting such a view. See e.g. Szabo [forthcoming]. However, as will become clear below, it is far from obvious that such a view would be superior to a quantificational analysis of descriptions.

On the preferred reading, (23) does not say that it is always the case that Tai eats with chopsticks. For Tai doesn't eat all the time. Rather, it says that Tai always eats with chopsticks *when he eats (with something)*. It is often assumed that the logical form of (23) under the preferred reading has the following tripartite structure containing an adverb, a restrictive clause and a nuclear scope [von Fintel 2004]:

(23a) Always/when Tai eats (with something)/Tai eats with chopsticks.

The question is how exactly a sentence like (23) is split into three parts. One proposal, due to Mats Rooth [1985], is that new information, or what is sometimes called 'focus', determines which elements in the sentence are mapped onto the nuclear scope and which onto the restrictor.²⁶ On Rooth's proposal, the nuclear scope contains the entire sentence (without the adverb) at some level of representation, and the non-focal material is copied and mapped onto the restrictive clause. The mechanism is essentially this. Focus determines a set of alternatives that in turn determines the domain of the quantifier. Thus, (23) is evaluated with respect to alternative ways in which Tai could be eating: with knife and fork, with his hands, with his feet, etc.

Tai eats with chopsticks

Tai eats with knife and fork

Tai eats with his hand

²⁵ The example is from Quine [1966: 90-92]. For discussion see von Fintel [2004]. The material in brackets is the focus material.

²⁶ This theory has also been defended by e.g. Partee [1991] and Krifka [1992]. A pragmatic account of partition can be found in e.g. von Fintel [2004]. Von Fintel's theory of partition is a special case of a more general theory of quantifier restriction, according to which quantifier phrases contain an aphonic, indexical domain variable assigned a value by context. Stanley and Szabo defend a version of this approach to quantifier domain restriction in their [2000]. But whereas von Fintel is opting for a "clean semantics/pragmatics interface", Stanley and Szabo think that the contextually "completed" proposition is semantically expressed by the sentence in question.

Tai eats with his feet ...

The union of these alternatives (or set of sets of situations in which Tai eats) is then mapped onto the restrictive clause. In the case of (23) the content of the restriction thus becomes ‘Tai eats (with something)’.

Rooth originally proposed to combine the semantics of focus with a situation-based approach.²⁷ I shall here concentrate on a version of this approach explored by Heim in “E-Type Pronouns and Donkey Anaphora”.²⁸ On Heim’s situation-based approach, adverbs of quantification, unlike quantifiers fronted by determiners, quantify over minimal situations that are minimal with respect to so-called situation-participants.²⁹ A sentence like (23) containing the adverb ‘always’ asserts that for all minimal situations s_1 in which the content of the restrictive clause is true, there is a situation s_2 that s_1 is part of in which the content of the nuclear scope is true. Thus, on the assumption that the domain of the adverb in (23) is a set of situations in which Tai eats (with something), (23) comes out as:

²⁷ Rooth [1995] later developed a way of combining the semantics of focus with the unselective binding approach defended by Lewis, Kamp and Heim.

²⁸ For discussion of situation semantics, see also Kratzer [1989] and von Stechow [2004]. This proposal (or something like it) is considered and subsequently rejected by Lewis [1975]. An alternative analysis is Stephen Neale’s [1990: 121] D-type analysis. On Neale’s view, the pronouns are numberless definite descriptions constructed from the content of the antecedent clause. ‘When Joe is offered a cigarette, he smokes it’ thus comes out as ‘If Joe is offered a cigarette, he smokes the cigarette(s) he is offered’. As we will see, Heim’s situation-based approach will ultimately need to be supplemented with some sort of D-type analysis. However, it is difficult to see how the D-type analysis could account for sentences containing adverbs like ‘usually’, ‘sometimes’ and ‘never’ without assuming that adverbs of quantification quantify over situations (or events). The situation-based approach has other problems. For example, it is unclear how to account for sentences that involve “indistinguishable participants”, as in ‘When a bishop meets another bishop, he blesses him’. For there is no minimal situation containing a unique bishop. Kent Bach has suggested to me that he thinks these sentences are not literally interpretable, at least not in accordance with their presumed uses. It is imagined that in a given situation one bishop is distinguished somehow. But in fact no bishop is distinguished. Though I like the suggestion, I won’t pursue it here.

²⁹ A minimal situation in which p is a p situation none of whose proper parts are p situations. See Heim [1990: 146] and von Stechow [2004]. I am here setting aside the obvious temporal issues triggered by this account. Likewise, I shall ignore issues of vagueness.

- (23b) All minimal situations s_1 in which Tai eats with something are part of a situation s_2 in which Tai eats with chopsticks.

What is important about Heim's proposal for our purposes is that it allows us to treat indefinite and definite descriptions as existential quantifiers (with or without a uniqueness clause). Take, for example:

- (24) When Joe is offered a cigarette, he usually smokes it.

(24) claims that for most minimal situations s_1 in which the content of the restrictive clause is true, there is a situation s_2 that s_1 is part of in which the content of the nuclear scope is true. The adverb 'usually' here quantifies over a set of minimal situations in each of which Joe is offered a cigarette. Situations where Joe is offered more than one cigarette are split up into smaller one-cigarette situations [von Stechow 2004]. The pronoun 'it' depends on, but is not C-commanded by, its quantifier antecedent. Heim treats pronouns of this sort as definite descriptions containing case variables.³⁰ The unbound anaphoric pronoun 'it' in (24) goes proxy for something like 'the cigarette Joe is offered in the situation in question'. (24) thus comes out as:

- (24a) Most minimal situations s_1 in which Joe is offered a cigarette are part of a situation s_2 in which Joe smokes the cigarette he is offered in s_1 .

Notice that on this analysis the occurrence of 'a cigarette' in (24) expresses existential quantification. Moreover, the definite description 'the cigarette Joe is offered', which goes proxy

³⁰ Heim's account of unbound anaphoric pronouns goes back to Evans [1977]. On Evans's view, however, unbound anaphoric pronouns are referring expressions whose reference is fixed by a definite description recoverable from the antecedent clause.

for the ‘it’ in (24), carries a semantic implication of uniqueness. Heim’s situation-based approach is thus entirely in agreement with the basic tenets of Russell’s theory.

This returns us to the original point. If we combine Rooth’s theory with Heim’s, the alleged generic uses of descriptions can be given a quite straightforward Russellian account.³¹

Consider:

(25) The student who procrastinates usually [fails]_F.

Here is what Rooth’s theory predicts: the entire sentence (without the adverb) maps onto the nuclear scope, the non-focal material ‘the student (who) procrastinates’ maps onto the restrictive clause in the derivation of logical form.³² Thus, (25) may be seen as having the following tripartite structure:

(25a) Usually/when the student procrastinates/the student who procrastinates fails

If we treat ‘usually’ as quantifying over minimal situations, (25) can be rendered as:

(25a) Most minimal situations s_1 in which exactly one student procrastinates are part of a situation s_2 in which the student who procrastinates in s_1 fails.³³

³¹ I assume that some singular definite generic descriptions can be given a taxonomic interpretation. For example, ‘the dinosaur is extinct’ is probably best read as saying that the totality of the world’s dinosaurs is extinct. For discussion see Graff [2001: 29-30].

³² More carefully, focus determines a set of alternatives (i.e., ‘the student who procrastinates fails’ and ‘the student who procrastinates does not fail’), and the union of these alternatives (i.e., ‘the student who procrastinates either fails or does not fail’) is accommodated into the restrictor clause. For simplicity’s sake, I shall take the adverb to quantify over cases of procrastinating students.

³³ For ease of exposition I write ‘exactly one student procrastinates’ rather than the equivalent phrase ‘the student procrastinates’.

‘The student who procrastinates’ is uniquely satisfied with respect to minimal situations in which exactly one student procrastinates. Hence, the occurrence of ‘the student who procrastinates’ in (25) is just a Russellian definite description relativized to minimal situations.

A similar treatment is available in the case of:

(26) A student who procrastinates usually [fails]_F.

On the preferred interpretation, (26) is equivalent to (25). It would therefore be natural to treat (26) as having the same tripartite structure as (25). However, if the entire sentence (without the quantifier) fills the nuclear scope, while the non-focal material ‘a student procrastinates’ maps onto the restrictive clause, then we get the following tripartite structure:

(26a) Usually/when a student procrastinates/a student who procrastinates fails.

Notice that the indefinite description ‘a student who procrastinates’ appears in both the restriction and the nuclear scope. When indefinites appear more than once in the same text, subsequent occurrences tend to be re-interpreted. But this, of course, would give us the wrong result in this case. In other words, (26) does not have the same logical form as:

(27) Usually, when a student procrastinates, a student who procrastinates fails.

For unlike (26), (27) would be true if ten students procrastinate but only one of them fails. The difference between (26) and (27) is that the restrictor argument in (26) is unpronounced. Since the entire sentence (minus the quantifier) maps onto the nuclear scope, and the non-focal material ‘a student who procrastinates’ maps onto the restrictor clause, the same non-focal surface material appears in both the restrictor clause and the nuclear scope. Consequently, the occurrence of ‘a

student who procrastinates' in the nuclear scope isn't re-interpreted. We can account for this difference between (26) and (27) by relativizing the occurrence of 'a student who procrastinates' in the nuclear scope of (26) to minimal situations. More precisely, for any minimal situation s_1 in which the content of the restrictor is true there must be a situation s_2 that s_1 is part of in which the content of the nuclear scope is true. What's more, there must be a student in s_2 that is also in s_1 and that makes the content of the nuclear scope true. (26) thus comes out as:

(26b) Most minimal situations s_1 in which a student procrastinates are part of a situation s_2 in which a student who procrastinates in s_1 fails.

Since the analysis requires that a procrastinating student who fails in s_2 be present in s_1 , the analysis correctly predicts that (26) is equivalent to (25), which contains a definite description in place of the indefinite.

With sentences containing several indefinite descriptions in the restrictor clause, matters are more complicated.³⁴ To be sure, there are some cases in which the proposed treatment yields correct predictions. Take example (21), repeated from above:

(21) A semanticist who hears of a good job usually applies for it.

On the present analysis, (21) comes out as:

³⁴ Another difficulty arises with generics containing pronouns that are anaphoric on, but not C-commanded by, their quantifier antecedents. Consider: (i) A farmer who buys a donkey usually [vaccinates it]_F. On the preferred reading, (i) means something like 'Most farmers who buy a donkey vaccinates every donkey they buy'. However, notice that the following simple predicative analysis is flawed. (ia) [Often x : farmer x & $[\exists y$: y is a donkey] $(x$ buys $y)$] $(x$ vaccinates $y)$. The problem is that the 'y' in 'x vaccinates y' is not in the scope of the existential quantifier. Graff [2001: n. 27] mentions in passing that we should treat the 'it' in sentences like (i) as a case of unbound anaphora. Graff would probably treat the 'it' as a definite description. But since a farmer may buy more than one donkey, the 'it' cannot go proxy for a singular definite description. Presumably, Graff would treat it as a definite description that is unmarked for number: roughly 'the donkey or donkeys he/she owns'. Neale [1990: 121] defends a version of this proposal. See also Davies [1981]. A similar strategy is, of course, available to the situation-theorist.

- (21a) Most situations s_1 in which a semanticist hears of a good job are part of a situation s_2 in which the semanticist who hears of a good job in s_1 applies for the job she hears about in s_1 .

However, we will need to modify Heim's proposal in order to account for sentences that require an asymmetric reading. Take:

- (28) A farmer who owns a donkey is usually rich.

Here 'usually' does not quantify over situations that are minimal with respect to pairs of farmers and donkeys [Kadmon 1987]. For suppose otherwise. Then (28) would be true in the following circumstances. Among the ten donkey-owning farmers, one owns a hundred donkeys and is rich, the other nine own one each and are poor. However, (28) is false in those circumstances. In (29) the adverb apparently quantifies over situations that are minimal with respect to donkey-owning farmers rather than pairs of farmers and donkeys. Situations where a donkey has several owners are thus divided into smaller one-owner situations, but situations where a single donkey-owning farmer owns several donkeys are not divided into smaller one-donkey situations.³⁵ On the situation-based approach, (28) can thus be rendered as follows:

³⁵ More generally, it seems that situations are minimal with respect to individuals denoted by the discourse topic [Chierchia 1992]. In 'if a drummer lives in an apartment complex, it is usually half-empty', for example, 'usually' quantifies over cases of drummers who live in apartment complexes or cases of apartment complexes in which drummers live. When 'drummers' is topical, as in 'Most drummers live in crowded dormitories. But if a drummer lives in an apartment complex, it is usually half-empty', 'usually' quantifies over cases of drummers. When 'apartment complexes' is topical, as in 'Most apartment complexes are crowded. But if a drummer lives in an apartment complex, it is usually half-empty', 'usually' quantifies over cases of apartment complexes.

(28d) Most minimal situations s_1 in which a farmer owns at least one donkey are part of a situation s_2 in which the farmer who owns at least one donkey in s_1 is rich.

As long as ‘most’ quantifies over situations that are minimal with respect to donkey-owning farmers, (28d) is true just when most farmers who own at least one donkey is rich, which is as it should be.

It seems, then, that generic uses of descriptions can be given a quite straightforward Russellian account. Whether a Russellian or predicative account of descriptions is correct depends at least in part on whether adverbs are best treated as quantifying over individuals or situations.³⁶ If adverbs are taken to quantify over individuals, descriptions are best treated as predicates. If adverbs are taken to quantify over situations, descriptions are best treated as Russellian. However, I think there is good reason to treat adverbs as quantifying over situations. First, on a situation-based account, adverbs of quantification need not be treated as selective in some contexts and unselective in others. Instead, they are treated as quantifying over different sorts of minimal situations in different contexts. Second, a situation-based account does not require us to treat definite descriptions as semantically indefinite.³⁷ Third, unlike an analysis that takes adverbs to quantify over individuals, the situation-based analysis is applicable to a wide variety of cases. Consider, for instance:³⁸

³⁶ Of course, it is also possible to treat adverbs as quantifying unselectively over both individuals and events. It would be beyond the scope of this paper to compare this treatment of Q-adverbs to the proposed treatment. For discussion see Chierchia [1995]. The important point here is that generic uses of descriptions *can* be given a Russellian account.

³⁷ One problem I haven’t dealt with is that some relative clause donkey sentences and conditionals seem to admit of (or require) a so-called weak reading. For example, ‘If John has a credit card, he will pay the bill with the credit card’ does not seem to say that John will pay the bill with every credit card he has. I shall not attempt to deal with this problem here. However, it should be noted that the problem arises even if one treats descriptions as predicates, provided that descriptions are treated as carrying a semantic implication of uniqueness. Thus, the existence of weak readings of description sentences doesn’t challenge the claim that descriptions are quantifiers; rather, it challenges the claim that definite descriptions ought to be treated as carrying a semantic implication of uniqueness.

³⁸ (16) is also problematic for Stanley’s [2002] nominal restriction approach. On Stanley’s view, a sentence like ‘The customer is always right’ is to be interpreted as: ‘The \langle customer, $f(i)$ \rangle is always right’ where f maps objects onto quantifier domains, and the adverb of quantification ‘always’ raises and binds the

(29) John always wears a [green]_F sweater.

On the preferred reading, (29) says that it is always the case that when John wears a sweater, he wears a green sweater. But if ‘always’ quantifies over individuals, (29) comes out as (applying, for example, Graff’s LF₄ PN rule):

(29a) [Always x: x is a green sweater](John wears x)

(29a) is equivalent to something like ‘John wears every green sweater’. But, of course, this is not a possible reading of (29). The situation-based approach, on the other hand, gives us the right result in this case. The entire sentence (minus the adverb) is mapped onto the nuclear scope, and the non-focal material is mapped onto the restrictive clause. So, (29) comes out as:

(29a) All minimal situations *s*₁ in which John wears a sweater are part of a situation *s*₂ in which John wears a green sweater.

(29a) is equivalent to ‘Whenever John wears a sweater, he wears a green sweater’, which is the reading we want.

VII. Concluding Remarks

The main purpose of this paper has been to show that the case for a predicative analysis of descriptions is far from conclusive. We have seen that the syntactic considerations do not favor a predicative analysis over a quantificational approach. Moreover, as noted above, previous

variable *i*. This approach won’t work in the case of (16), however. The best we can do is: ‘John always wears a <green sweater, *f*(*i*)>’. But the latter implies that John wears every green sweater.

predicative analyses of descriptions in argument position seem to run into problems that are easily avoided on a more conservative semantic account.

One loose end. Most quantifier phrases cannot occur in the restrictor position of an implicit or explicit adverb of quantification. For example, ‘All owners of a Porsche are usually smug’ cannot be read as saying that most Porsche-owners are smug. Is this a problem for the quantificational analysis? Not necessarily. ‘Any’ phrases, which the predicativists take to be quantifiers, do seem able to occur in the restrictor position of an adverb of quantification, as in ‘Seldom is any owner of a Porsche smug’ and ‘Only rarely does any student who procrastinates fail’. Another case: ‘some’ phrases. ‘Someone who graduates from MIT is usually smart’, for example, tend to be read as saying that most graduates from MIT are smart. And finally: ‘Ten boys can’t form a soccer team’ tend to be interpreted as meaning that whenever we have ten boys, they cannot form a soccer team [Partee 1986], and ‘Often, when several philosophers get together, they smoke’ tend to be interpreted as meaning that in many cases in which several philosophers get together, they smoke.

Granted. Not all existential quantifier phrases show up in the restriction of an adverb of quantification. ‘Some student who procrastinates usually fails’, for example, cannot be read as saying that most students who procrastinate fail’. In other words, the adverb cannot here be taken to quantify over cases of students who procrastinate. Nevertheless, a quasi-generic reading is indeed available for ‘some’ phrases. If ‘usually’ is assigned a frequency reading, ‘Some student who procrastinates usually fails’ seems to say something like ‘In most cases in which C, some student who procrastinates fails’, where ‘C’ is a variable assigned a value by context.³⁹ ‘Some student who procrastinates’ is here evaluated with respect to a range of contextually restricted situations. Other quantifiers with determiners admit of similar quasi-generic readings. For example, ‘Most students who procrastinate usually fail’ can be read as: ‘In most cases in which C,

³⁹ For example, ‘In most cases in which I teach a philosophy of language seminar, some student in that seminar who procrastinates fails’.

most students who procrastinate fail'. Notice that indefinite descriptions behave like ordinary quantifiers with determiners in this respect. 'A student who procrastinates usually fails' can be read as 'In some cases in which C, a student who procrastinates fails', where 'a student who procrastinates' is evaluated with respect to C-situations. It seems to be clear, then, that the apparent quantificational variability of descriptions does not undermine a Russellian analysis of descriptions. In fact, the various parallels between descriptions and determiner quantifiers seem to create some pressure to treat descriptions as quantifiers. The moral of this paper: though the battle isn't over, there are several good reasons for not rejecting the popular view of descriptions as quantifiers all too swiftly.⁴⁰

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