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Descriptions and Logical Form

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According to a tradition associated with Frege, Russell, and Tarski, logical form is that aspect of sentence structure relevant to inference, semantical evaluation, and ontological commitment. More recently, Chomskian linguistics has given birth to an alternative conception, taking Logical Form (henceforth, 'LF') to refer to the level of grammatical description at which scope precedence among quantifiers and related expressions is made explicit. Although syntactically motivated, LF is an attractive and powerful medium for representing logical form in the sense associated with Frege, Russell, and Tarski. The present chapter considers in detail Russell's proposal concerning the logical form (in the traditional sense) of sentences exemplifying the surface grammar *the F is G* – namely, the Theory of Descriptions – and asks to what extent it can be accommodated in a picture of logical form inspired by LF.

Due to considerations of space, an alternative approach to the logical form of description sentences is not given emphasis equal to Russell's, although I believe it to be viable and worthy of consideration. This is the approach that takes descriptions to be referential singular terms. My reasons for preferring Russell's theory are given in the subsection of Section 1, "Descriptions as singular terms". In addition, the challenge to Russell posed by the referential use of definite descriptions is not addressed in what follows. I am assuming – what is perhaps not obvious – that the Russellian theory can accommodate such usage.

1   Preliminaries

Formal aspects of Russell's theory of descriptions

Russell's rendering of a sentence exemplifying the surface form *the F is G* is as follows:

(1) $G(\imath x)Fx$

(1) corresponds more precisely to the quasi-formal English sentence: the *x* such that *x* is F *is* G. (1) is defined in terms of (2):

(2) $\exists x(\forall y(Fy \equiv y = x) \land Gx)$

That is to say: something is both G and uniquely F. It will be useful to keep the English language paraphrase in mind, since much in subsequent sections turns on it. Note that, in (1), the variable 'x' as it occurs in 'Fx' is bound by the iota operator, '(ιx).' In its capacity to bind a free variable, the iota operator is similar to the first order quantifiers '$\exists x$' and '$\forall x$.' Yet, whereas these operators, appended to 'Fx,' will produce a closed formula, or sentence, the iota operator will produce an expression that functions, *syntactically*, as a term. As we shall see, the qualification is important.

It will be noted that, as an analysis of (1), (2) is not quite right as it stands, since it fails to tell us what to do when a description is embedded in a complex context – for example (3):

(3) $G(\iota x)Fx \supset p$.

This sentence has the following two readings:

(3a) $\exists x(\forall y(Fy \equiv y = x) \wedge (Gx \supset p))$
(3b) $\exists x(\forall y(Fy \equiv y = x) \wedge Gx) \supset p$

(3a) claims that something is both G-only-if-p and uniquely F, whereas (3b) claims that something is both G and uniquely F, only if p. That these readings are truth-conditionally distinct is easy to see: if nothing is F, then (3a) will be false, whereas (3b) will be true. Intuitively, the respective readings correspond to what we take the scope of '(ιx)Fx' to be in (3). If the scope of '(ιx)Fx' is the entire sentence (3), then (3a) is the correct reading; if the scope of '(ιx)Fx' is restricted to 'G(ιx)Fx,' then (3b) is the correct reading.

Russell introduced a somewhat cumbersome notational device –'(ιx)Fx' enclosed in square brackets – to mark off the scope of '(ιx)Fx.' Assuming Σ is a context in which 'G(ιx)Fx' can occur as a subformula, Russell's idea is as follows: If the scope indicator is prefixed *directly* to the formula in which the contained description occurs as an immediate constituent (here, 'G( )'), then the description takes narrowest scope. This situation is represented thus: $\Sigma([(\iota x)Fx]G(\iota x)Fx)$. On the other hand, if the scope indicator is prefixed to Σ, then the description has wide scope with respect to Σ (equivalently, the scope of the description is said to be Σ itself). The latter situation is represented in the following manner: $[(\iota x)Fx] \Sigma(G(\iota x)Fx)$. For example, in (3c), the description takes narrow scope, indicated by the fact that '$[(\iota x)Fx]$' is affixed directly to the simplest sub-formula containing '(ιx)Fx.' In (3d) the description takes wide scope, as it is prefixed to the entire formula:

(3c) $[(\iota x)Fx]\ G(\iota x)Fx \supset p$
(3d) $[(\iota x)Fx]\ (G(\iota x)Fx \supset p)$

We are now ready for the official definition of '(ιx)Φx' as stated in *Principia Mathematica*:

(*14.01) $[(\iota x)\Phi x]\ \Psi(\iota x)\Phi x =_{df} \exists x(\forall y(\Phi y \equiv y = x) \wedge \Psi x)$

(*14.01) does not define '$(\iota x)\Phi x$' directly, but rather provides a procedure for eliminating it from any context in which it may occur. That is to say, it provides a *contextual definition* of '$(\iota x)\Phi x$.' While Russell's views on definition are complex and cannot be adequately treated here, it is important to bear in mind his claim that "a definition is concerned wholly with symbols and not with what they symbolize"; they are, "strictly speaking, typographical conveniences" (Whitehead and Russell 1925–7: 11). This strongly suggests a reading of the definitions as merely providing abbreviations for complex formulae. Yet, Russell does note that although a definition in his sense is always "theoretically . . . superfluous," it does retain a certain pragmatic significance, especially in those cases where the definiendum (the expression being defined) is familiar. In such cases the "definition contains an analysis of a common idea, and may therefore express a notable advance" (Whitehead and Russell 1929: 13). Applied to definite descriptions, this is significant: it suggests that we notice a parallel between the definiendum and something already familiar to us – definite descriptions as they occur in, say, English. To choose to abbreviate '$\exists x(\forall y(Fy \equiv y = x) \wedge Gx)$' with a formula that has the argument structure of a simple predication (e.g. 'Gt') may be theoretically arbitrary – in principle, another abbreviatory convention would have served as well – but it makes a point about the logical form of English sentences exemplifying *the F is G* that the alternative would not have: namely, that they can be eliminated in a similar manner.

This point is worth emphasizing, since it is often assumed that Russell's *Principia* theory of descriptions has no bearing on the interpretation of definite descriptions in English and other natural languages, and, indeed, that this was Russell's official position. Writing in response to Moore, Russell remarked that "the whole of my theory of descriptions is contained in the beginning of 14 of *Principia Mathematica*," adding that "the reason for using an artificial language was the inevitable vagueness and ambiguity of any language used for every-day purposes" (Russell 1944: 890). While some (e.g. Mates 1973) have seen in this remark a concession that his theory is really *only* a formal definition, this is in fact not the case: "The two definitions which embody the theory of descriptions (*14.01.02), though formally they are merely nominal definitions, in fact embody new knowledge; but for this, they would not be worth writing about" (Russell 1944: 891). This suggests quite clearly that Russell intends his definitions to provide an analysis of definite descriptions. If he concedes anything, it is that his definitions do not provide a general theory of *the definite article*, since, as Moore pointed out, the definite article is used in ways that the theory cannot accommodate (notoriously, the generic use of *the*).

Descriptions as singular terms

An alternative paradigm to Russell's maintains that definite descriptions are semantical singular terms. On this approach, surface grammar does not mislead with respect to logical form: '$(x)Fx$' is both grammatical subject *and* logical subject of '$G(\iota x)Fx$.' Initially suggested by Frege, the singular term proposal is defended in Strawson (1950), which criticizes Russell for identifying the presuppositions characteristic of description sentences with the actual content of such sentences. As Strawson writes: "To use the word 'the' in [the uniquely referring] way is . . . to imply (in the relevant sense of

'imply') that the existential conditions described by Russell are fulfilled. But to use 'the' in this way is not to *state* that those conditions are fulfilled" (Strawson 1950: 147).

Consider, in this connection, (4):

(4)   The present king of France is bald.

For Strawson, an utterance of (4) presupposes, and does not assert, that there exists a unique French monarch. To see this, he has us imagine the following scenario. Someone asks you, apparently seriously, whether the present king of France is bald. If Russell is correct, it is appropriate to respond, "no, that's false." Clearly, however, a more appropriate response would be to address the speaker's beliefs, and not what she said. One might respond, for example, by saying: "You seem to be laboring under a false belief – France is not a monarchy." This suggests that the propriety of the description – its having a unique denotation – is not an aspect of the content of description sentences, but of the rules dictating their correct use.

The notion of presupposition Strawson appeals to can be defined as follows: An utterance u presupposes p just in case: u is true or u is false only if p is true. It follows that sentences containing vacuous descriptions have no truth-value (since the relevant uniqueness and existence propositions are false). This does appear to be the case with post-Revolutionary utterances of (4). But if there are intuitions that favor Strawson, there are also intuitions that favor Russell. Consider (5a/b):

(5a)   If Ferdinand is not drowned, Ferdinand is my only son. (Russell)
(5b)   Yesterday, I dined with the King of France. (Neale)

Russell remarks that the King in *The Tempest* might have uttered (5a), and suggests that it would be true even if Ferdinand – the King's only son – had, in fact, been drowned. In addition, while Strawson would hold that an utterance of (5b) presupposes that France has a single monarch, and thus should be without a truth-value, one is hard-pressed to hear it as anything but false. So, it seems that appeals to usage provide little guidance in determining whether or not the relevant uniqueness and existence propositions are part of what is said by a description sentence. Without decisive evidence in favor of the presupposition doctrine, the Strawsonian challenge to Russell is inconclusive.

In addition, the singular-term interpretation of descriptions fails to provide a satisfying account of the propositional content of description sentences. A naïve application of this interpretation would identify the proposition expressed by an utterance u of 'the current US president is a man' with the ordered pair ⟨Clinton, is a Democrat⟩. This would be to associate the wrong proposition with the utterance. What u said should be true at any circumstance of evaluation E at which the US president (at E) is a democrat. However, a naïve application of singular-term approach will entail that what I said in uttering u is true at E just in case Clinton exists at E and is a man at E – even if the US president at E is woman! Thus, the naïve singular-term approach must be rejected.

The obvious solution is to relativize the reference relation to context. On this view, u expresses ⟨f, is a man⟩, where f is a partial function from a circumstance of evaluation E to the unique president, if there is one, at E. (Note that f corresponds to one inter-

pretation of Frege's notion of sense.) The proposition $\langle f,$ is a man$\rangle$ is true at E just in case the US president (at E) is a man (at E). This assigns the correct proposition to u, at least, if we restrict our attention to those contexts at which there is a unique US president. However, this proposal, while truth is conditionally adequate, attributes a dimension to referential singular terms that is not independently motivated. As Evans writes:

> Simply in order to assimilate descriptions to referring expressions, we introduce a major change in the semantic apparatus in terms of which we describe the functioning of referring expressions in general. As a consequence of this change, we ascribe to names, pronouns, and demonstratives semantical properties of a *type* which would allow them to get up to tricks they never in fact get up to; since their reference never varies from world to world, this semantic power is never exploited.   (Evans 1982: 56)

Adding an extra parameter to the reference relation is necessary if we are to provide an adequate analysis of description sentences consistent with the thesis that descriptions are referring expressions. Yet, it arbitrarily weakens the reference relation. While in no way a decisive refutation of the referential interpretation of descriptions, this consideration raises a genuine concern that the classification resulting from the analysis "may not correspond to any natural semantical kind" (Evans 1982: 57). In sum: the Strawsonian view can assimilate descriptions to the class of referential singular terms only by characterizing that class in an manner that appears dangerously *ad hoc*.

While these considerations do not settle the question against the singular term approach, the Russellian analysis seems at this point more promising.

2   Descriptions and Quantification

Restricted quantification

In Chomskian linguistic theory, 'Logical Form' (or LF) refers to a level of syntactic representation at which the scope properties of quantified noun phrases are made explicit. This level is posited to account for the distinct readings that can be assigned sentences such as 'Everyone thanked someone.' A sentence that is n ways structurally ambiguous at surface structure – the level that is realized phonologically – is assigned n distinct representations at LF. Although motivated by purely syntactic concerns, LF can function as input to a semantic theory – a theory that assigns propositions or truth conditions to sentences of English – more effectively than the language of *Principia*. This is due to the fact that, at LF, natural language quantifiers are represented as restricted quantifiers. In particular, they are represented as variable-binding devices constructed by pairing a determiner (itself represented as a variable-binding device) with a predicate and enclosing the result in brackets. Using this notation, we can represent (1) as follows:

[the x: Fx] (Gx)

This allows for a perspicuous representation of scope. For example, the readings captured by (3a/b) correspond to (3a′/b′):

(3a′)   [the x: Fx] (G$x \supset p$)
(3b′)   [the x: Fx] (G$x) \supset p$

Note that the current proposal does not entail that descriptions, any more than other quantifier phrases, can occur as logical subjects. Indeed, it shows why certain apparent grammatical subjects – that is expressions, like quantifiers, that are subjects at surface structure – are not, ultimately grammatical subjects at all. The proposal maintains that it is characteristic of a quantifier that it can be 'raised' from the position in which it occurs in S to a position preceding S, leaving behind a 'trace' which it binds from its new location. To illustrate: the quantifier in 'John admired [some vases]$_1$' can be relocated to the left of the original sentence: '[some vases]$_1$ John admired t_1.' The quantifier and trace are co-indexed, indicating that the former binds the latter. The principle allowing this movement is referred to as QR (for *Quantifier Raising*). While constraints on QR are an important aspect of the proposal under discussion, we will have to take it as given that the position to which the quantifier is raised binds the 'evacuation site.' (For details, see Heim and Kratzer 1997.) The power of this proposal can be seen in the following application:

(6a)   [each curator]$_1$ admired [some vases]$_2$

(6a) represents the surface form of 'Each curator admired some vases.' Intuitively, this sentence is ambiguous between two readings. These readings can be supplied by successive applications of QR:

(6b)   [each curator]$_1$ t_1 admired [some vases]$_2$
(6c)   [some vases]$_2$ [each curator]$_1$ t_1 admired t_2

Alternatively, '[some vases]$_2$' in (6b) can be raised to the position immediately preceding the sentence containing its trace, yielding the second reading:

(6c)   [each curator]$_1$ [some vases]$_2$ t_1 admired t_2

Note that the movement characterized by QR is possible only for quantifiers (including *wh*-phrases): names and other singular terms cannot be raised. Had we adopted the Frege–Strawson approach, QR would not be applicable to descriptions.

The notation used above translates quite straightforwardly into the restricted quantifier notation (with traces indicating argument positions in open sentences), suggesting that the syntactic level at which disambiguation occurs is closely tied to, if not identical with, the level at which semantic interpretation occurs.

Russell has been criticized for presenting apparently divergent pictures of the logical form of description sentences. On the one hand, (*14.01) suggests that description sentences are really only typographical abbreviations of more complex formulae. Yet, it becomes virtually irresistible to read (*14.01) as providing the *truth conditions* for sentences containing the *iota* operator. On the latter reading, the logical form of 'G(ιx)Fx' is that of a singular sentence, albeit one whose truth conditions are given quantificationally. We have seen how this latter view is mistaken – for Russell, descriptions are

not semantical singular terms. Neale suggests that an advantage of the restricted quantifier interpretation eliminates any residual uncertainty surrounding (*14.01) (Neale 1995: 779–80). His point is that the latter interpretation reveals a feature of definite descriptions that (*14.01) obscured. Indeed, if we take the notation at face value, then it appears that descriptions really are natural language quantifiers. Small wonder, then, that when treated as singular terms in the syntax of *Principia Mathematica* they don't have meaning in isolation: they can't be assigned meanings in this manner precisely because, being quantifiers and not terms, they are not the kinds of expressions that are assigned referents (and, at least for Russell, the only meaning-candidate that a description, being a term, could have if it were, *per impossibile*, to have meaning in isolation, would be a referent). It is also notable that Russell's initial presentation of the theory of descriptions in "On Denoting" classifies definite descriptions with other natural language quantifiers (his term was "denoting phrase"), such as "all men," "some men," and "no men." Thus, the restricted quantifier notation has some claim to capturing the essence of Russell's theory.

This formalization will provide us with a new means of expressing (*14.01) – namely [EQ]:

[EQ]:   [the x: Φx](Ψx) = $_\text{df}$[some x: [all y: Φy]($y = x$)](Ψx)

Indeed, Stephen Neale has claimed that '[the x: Φx] (Ψx)' is "definitionally equivalent" to its Russellian expansion (Neale 1990: 45). Yet, while it appears to place Russell's theory in a new and illuminating light, [EQ] raises certain difficulties of its own. We now turn to a discussion of these difficulties.

The problem of incompleteness

One ubiquitous feature of natural language quantification is incompleteness or underspecification. We often utter sentences such as (7), fully intending to say, and be taken as saying, something true:

(7)   Everyone left the party early.

Of course, if we assume that (7) expresses a context-independent proposition, then it would be false (and, what is more, irrelevant) at any actual context, since it would make a claim about *every* existing person. Nonetheless, there is a clear intuition that it can be used to say something true and relevant. Similarly with (8): it can be uttered in many contexts to express a true proposition, even though a naïve application of Russell's theory will assign it a false (and conversationally irrelevant) proposition:

(8)   The senator will not seek re-election.

These intuitions are defeasible, of course – it may well be that speakers systematically misidentify what they say, expressing false propositions when in fact they appear to be expressing truths. The latter view – defended by Kent Bach (1988) – is attractive in that it leaves our semantics untouched, requiring no supplementary apparatus to accom-

modate contextual effects. Given the slender intuitive basis for such a view, however, it is best considered only when all the available options have been found wanting; we shall not consider it further here.

A central approach to incompleteness – which, unlike the approach just considered, takes incompleteness to be a semantic phenomenon – is the explicit strategy (Neale 1990). On this approach, an utterance of (8) expresses a proposition that completes the description 'the senator' (e.g. 'The *senior senator of New York* will not seek re-election'). Perhaps its most succinct formulation is to be found in Schiffer (1995), where it is stated in the form of a 'meaning rule' for *the F is G*:

[ES]   Utter *the F is G* only if you mean that [the x: F$x \wedge$ H*x] (Gx),

where H* is a contextually-determined, implicitly referred-to property that completes *the F* (this formulation departs slightly from Schiffer). According to [ES], descriptions have a hidden constituent whether or not they are in fact incomplete. In cases where *the F* is complete, H*x can be any property such that (F$x \wedge$ H*x) $\equiv$ Fx.

[ES] is an instance of a more general principle, which it will be convenient to state for future reference (*det* is a placeholder for a determiner):

[ES-Q]   Utter *det F is G* only if you mean that [*det x*: F$x \wedge$ H*x] (Gx),

where H* is as before.

While the explicit approach is often interpreted as claiming that, typically, an incomplete description is *elliptical* for a contextually definite completion, the notion of ellipsis involved is left at an intuitive level – it is not to be identified with the formal notion familiar from syntactic theory. According to that notion, a sentence such as 'John loves opera and Mary does too' is elliptical for 'John loves opera and Mary loves opera' in the following sense: the words 'loves opera' are "covertly present" in the former (Stanley and Szabó 2000). That is, a grammatical rule has permitted the deletion of 'loves opera' in the former sentence in such a way that the excised material can be reconstructed from the resulting context. It is a merit of [ES] that it avoids this reading of the explicit approach, since the syntactic reading assumes that the deleted descriptive material to be recovered from the context is lexical. It is, to say the least, implausible that context alone would allow the audience to recover the completion, if the latter is identified with a string of lexical items.

In fact, a problem remains even if we relax the conditions on completion to accord with [ES]. The central obstacle to acceptance of the explicit approach is that, typically, when a speaker utters an incomplete description, there are a number of completing properties that are equally compatible with her intentions, yet no *one* that is exclusively so. Since [ES] implies that a definite description should be uttered only if there is a *particular* completion that the speaker intends, it fails to state the meaning rule that underlies the competent speaker's mastery of the definite article, since the competent speaker often utters description sentences with no particular completion in mind. Consider, for example, (8). For any normal context in which (8) is truthfully uttered, there will be a number of completions of this sentence, each of which are equally obvious ways of

picking out the intended person, but none of which is significantly more obvious than the others. On the other hand, [ES] requires that there is one property H*, such that in uttering (8) in a normal context, the speaker asserts that the H* senator will not seek re-election. As we have seen, there is reason to be skeptical that the speaker can have the 'meaning intentions' in uttering (8) that [ES] requires, since it is unlikely that there will be any distinguished property that the speaker can have intended in exclusion of all others (Schiffer 1995).

One natural modification is to relax the requirement that the completion be unique. The suggestion is that, in uttering (8), the speaker did not intend to convey a particular completion (or, equivalently, a determinate completing proposition), but rather that she "*sort-of-meant*, or vaguely meant" several completions (or completing propositions) (Schiffer 1995: 371). The suggested revision of the meaning rule would run as follows:

[ES*] Utter *the F is G* only if you mean that [the x: Fx ∧ H*x] (Gx),

where, for every candidate property H, H* *indeterminately refers* to H (a *candidate property* being a completion of *the F* compatible with the speaker's intentions). The problem with [ES*] is that it rather arbitrarily links quantifier incompleteness with content indeterminacy. But, in fact, there is no apparent content indeterminacy in a typical utterance of (8). A more promising approach is to retain unmodified [ES] and maintain that, despite appearances, speakers by and large have a determinate completion in mind when uttering sentences such as (8). On this interpretation a speaker need not have conscious access to the implicitly referred-to completing property in order to comply with [ES] (cf. Loar 1976).

Note, however, that even if we assume that one or another implementation of the explicit strategy is correct, another worry arises. I have been suggesting that Russell's theory requires contextual supplementation if it is to provide an adequate account of our implicit capacity to assign the correct truth conditions to utterances containing incomplete descriptions. Indeed, Neale writes that this idea was not foreign to Russell:

> [O]nce the philosophical underpinnings of the Theory of Descriptions are in focus, it is clear that Russell is concerned with the propositions expressed by particular utterances of sentences containing descriptive phrases; he is *not* primarily concerned with the more abstract notion of the linguistic meanings of sentences-*types*.   (Neale 1990: 67; emphasis in text)

Yet, if we also follow Neale in accepting that '[the x: Fx](Gx)' is logically equivalent to its expansion we are in for trouble. To see this, consider a revision of [EQ] suggested by Neale's remarks:

[EQ*] An utterance u at C of *the F is G* is equivalent to an utterance u^* at C* of its Russellian expansion *exactly one thing is F and each thing that is F is G* (where C* differs from C only in respect of its containing u^* where C contains u^*).

It should be clear that [EQ*] is stronger than [ES] combined with [EQ] – indeed, for the Russellian, [EQ] should add nothing to [ES], which could be equivalently formulated as follows:

[ES-2]   Utter *the F is G* only if you mean that [some x: [all y: F$y \wedge$ H*y] ($y = x$)] (Gx).

As a number of philosophers point out – for example, Reimer (1992), Larson and Segal (1995) and Stanley and Williamson (1995) – a description sentence *S* as uttered at a context C cannot be assumed to be equivalent to its Russellian expansion S^* uttered at a relevantly similar context C*. Consider, for example, an utterance *u* at C of (9a):

(9a)   The party was a success.

The Russellian must maintain that *the same proposition*, or, at least, a *proposition with the same truth conditions*, would have been expressed by an utterance of (9b):

(9b)   There was exactly one party, and every party was a success.

As suggested, [ES] and [ES-Q] do not provide a guarantee that the respective utterances will be completed in the same way. The successive clauses in (9b) will not necessarily refer implicitly to the completing property referred to in (9a). Nor will they necessarily refer to one and the same property. They may refer, for example, to *party we attended last night* and *party we missed last night*, respectively. If so, (9a) and (9b) will express distinct propositions with potentially distinct truth-values.

In fact, the failure of [EQ*], while fatal to Russell's theory, does not undermine an attractive and closely related approach, one which drops [EQ*], but which accepts [ES] (and thus [EQ]). This approach entails that, for every context C, the proposition expressed by *the F is G* at C – namely, that [the x: F$x \wedge$ H*x] (Gx) – is equivalent to the proposition that [some x: [all y: F$y \wedge$ H*y] ($y = x$)] (Gx). Of course, this fails to give us an English equivalent for *the F is G*; it simply tells us, in a context-independent idiom, what proposition it expresses. In fact, demanding an equivalent *English* sentence might be asking for too much in any case, since failures of equivalence occur in other contexts. For example, the same sorts of considerations apply to Russell's analysis of cardinality quantifiers. There is no guarantee that (10a) and (10b) uttered at relevantly similar contexts, will be equivalent. Yet this is precisely what Russell's analysis, together with [ES-Q], would entail:

(10a)   Two cars approached.
(10b)   A car approached, a car distinct from the first approached, and no other cars approached.

Thus, the theory that remains, while not quite Russell's theory, cannot be assumed to be inadequate merely because it fails to meet the equivalence condition, since that condition appears implausibly strong, threatening not simply Russell's analysis of descriptions, but his analysis of cardinality quantifiers as well.

3   Descriptions and Predication

What is Russell's theory of predicative descriptions?

Russell's treatment of the indefinite description *an F* is well-known to logic students: it simply assimilates *an F* to the quantifier *some F*. (11a) and (11b) alike are thus rendered as (11c) (the use of 'human' in the analysis is discussed below):

(11a)   Socrates met a man.
(11b)   Socrates met some man / someone.
(11c) $\exists x(\text{Human}(x) \wedge \text{Socrates met } x)$

Russell's approach to occurrences of indefinite descriptions in predicative position – so-called predicate nominals – is modeled on his treatment of indefinite noun phrases in subject position. (12a) is rendered as (12b):

(12a)   Socrates is a man.
(12b) $\exists x(\text{Human}(x) \wedge \text{Socrates} = x)$

In contrast, a simple predication such as (13a) is rendered as the atomic sentence (13b):

(13a)   Socrates is human.
(13b)   Human(Socrates)

(11a) and (12a) do not share the same logical form *per se*: the relation obtaining between Socrates and the individual quantified over in (11a) is the *has met* relation, whereas in (12a) it is the identity relation – a logical constant. Nonetheless, there is an important sense in which Russell does ascribe the very same form to sentences exemplifying (11a) and sentences exemplifying (12a). They both exemplify the structure: '$\exists x(\text{Human}(x) \wedge \mathbf{R}(\text{Socrates}, x))$.'

It may initially appear perplexing that predicates and predicate nominals should receive differential treatment, given that, as James Higginbotham (1993) has suggested, the indefinite article in (12a) seems the "merest syntactic grace note." Addressing this concern, Russell writes:

> The proposition 'Socrates is a man' is no doubt equivalent to 'Socrates is human,' but it is not the very same proposition. The *is* of 'Socrates is human' expresses the relation of subject and predicate; the *is* of 'Socrates is a man' expresses identity. It is a disgrace to the human race that it has chosen to employ the same word 'is' for these two entirely different ideas – a disgrace which a symbolic logical language of course remedies. The identity in 'Socrates is a man' is identity between an object named . . . and an object ambiguously described.   (Russell 1919: 71)

Russell supplies no argument for his claim that the copula in 'Socrates is a man' is, in fact, the identity relation, or, more precisely, the relational property of being identical to something human. (Strictly speaking, 'Socrates is a man' is not an identity sentence

for Russell, since, as he would be the first to point out, 'a man' cannot occur as an argument of 'Socrates = x'.) Surely, intuition is at best silent on this question, if not decidedly opposed to the identity interpretation. Still, Russell does provide us with a uniform treatment of indefinites, and this counts in favor of his proposal. It would be strange if indefinite descriptions unaccountably played two distinct logical roles – corresponding to their respective *syntactic* roles as noun phrase and as predicate – especially given the fact that interpreting the predicative occurrences according to Russell provides the intuitively correct truth-conditions for the relevant class of sentences. So, while it isn't directly supported by intuition, we have strong methodological reasons for favoring Russell's proposal. All other things being equal, then, it is to be preferred to an account that assigns indefinites two distinct logical roles – as quantifiers and as predicates.

It will be observed that Russell's approach requires, for every general term, a corresponding predicate adjective true of exactly those things in its extension. For example, to regiment (12a) there must be a (simple) predicate adjective true of exactly those things in the extension of 'man.' While such an expression exists in the current case, a corresponding adjective will not be available for every general term – for example 'logician.' This presents a difficulty: the Russellian cannot suppose that the predicate corresponding to 'a logician' is just 'a logician,' as this presupposes an account of the expression being analyzed. But, neither can she assume that 'Logician(Russell)' makes sense – that a general term can function as an adjective – since this would effectively undermine a distinction that she is at pains to uphold. What the Russellian must maintain is that the failure for there to be a predicate for every general term is a linguistic accident – a defect of natural language. Although not fatal, this has the unwelcome consequence that, for many sentences containing predicate nominals (such as 'Russell is a logician'), a Russellian paraphrase (in the same language) is unavailable.

Russell's analysis of predicative occurrences of *definite* descriptions recapitulates his strategy in analyzing indefinites. For Russell, the sentences 'Whitehead *met* the author of *Principia*' and 'Whitehead *is* the author of *Principia*' exemplify a common structure: '[the x: x wrote *Principia*] (**R**(Whitehead, x)).' (I adopt the restricted-quantifier notation for readability.) The former translates as: '[the x: x wrote *Principia*] (Met(Whitehead, x)),' whereas the latter is: '[the x: x wrote *Principia*] (Whitehead = x).' Again, this account is attractive in that it treats definite descriptions in a uniform and truth-conditionally adequate manner – showing, in effect, how their diverse surface syntax belies a uniform logical role. In addition, it dovetails with Russell's account of predicate nominals, providing a uniform account of the predicative occurrence of both definite and indefinite descriptions. It would be rather *ad hoc* to suppose that predicative *an F* functions logically as a predicate but that predicative *the F* functions either as a term or a quantifier. (But see Fiengo and May (1996) for considerations that favor such a treatment.)

The picture that emerges is that sentences exemplifying α *V-s an F* possess the logical form '[some x: Fx] (**V**(α, x))' (where α is a singular term and **V** is the relation corresponding to 'V'), while sentences exemplifying α *BE an F* possess the logical form '[some x: Fx] (α = x)'. Similarly, sentences of the form α *V-s the F* are analyzed '[the x: Fx] (**V**(α, x)), whereas sentences of the form α *BE the F* are analyzed as '[the x: Fx] (α = x).' For reference, let's call this proposal Russell's Theory of Predicative Descriptions (*RTPD*).

The argument from awkwardness

An important challenge to Russell's proposal that quantifiers can be realized, at surface grammar, as predicates is that it yields odd results. For example, it sanctions as grammatical such sentences as 'John is most Democrats' or 'John is twelve apostles,' both of which seem to be uninterpretable and, indeed, ungrammatical. Prima facie, what I shall call *the argument from awkwardness* appears to be a significant worry.

The first thing to say is that there is reason to think that our resistance to these sentences is pragmatic, since other such contexts are less objectionable:

John is everyone / one person who has read Richardson's *Clarissa* in its entirety.
John is no one / someone you should meet.

In addition, similar examples involving quantifiers in subject position are equally unacceptable. That is, in general, those sentences with quantifiers in predicative position that strike us as unacceptable do not become any more acceptable if we place the predicatively-occurring quantifier in subject position. Consider 'John is most Democrats' or 'John is both candidates.' Moving the quantifier in 'John is most Democrats' to subject position ('Most democrats are [identical to] John') does not increase acceptability. Similarly, 'Both candidates are [identical to] John' is scarcely better than 'John is both candidates.' This suggests that what explains the unacceptability of quantifiers in predicative position is not that they are playing a role that quantifiers are strictly prohibited from playing. For, in general, substituting a determiner for *det* (other than *the*, *a*, and *some*) and a name for *t* in '[*det x*: F*x*] (*x = t*)' will either produce nonsense or, at best, express an intelligible but nonetheless awkward-sounding sentence.

The Russellian response to the argument from awkwardness, then, is to demand a context of the form *Q BE* α that is acceptable but whose acceptability is compromised by converting it to α BE *Q*. Until such a case is presented, Russell's picture is intact.

The argument from scope

Another argument, discussed by James Higginbotham (1987) and Delia Graff (2001), concerns a diagnostic for determining whether or not a surface predicate is a quantifier at the level of logical form. The idea is quite straightforward: if a certain predicate is in fact just the surface realization of a quantifier, then it should exhibit properties characteristic of quantifiers. In particular, it should interact with negation and similar devices to produce distinct readings, depending on which expression is assigned primary scope.

To fix ideas, let's consider an example. According to the criticism, if, as we are supposing, (14b) provides the logical form of (14a), then the negation of (14a) – namely, (14c) – should be ambiguous as between (14d) and (14e):

(14a)   John is a bachelor.
(14b)   [an *x*: Bachelor (*x*)] (John = *x*)
(14c)   John is not a bachelor.

(14d) ¬[an x: Bachelor (x)] (John = x)

(14e) [an x: Bachelor (x)] ¬ (John = x)

Yet, (14e) is clearly not an available reading of (14c). Intuitively, (14c) cannot be used to *say* that there is a bachelor who, as it happens, is not John. Similarly, 'John is not a Martian' does not have a reading according to which it entails that there are Martians. So, it seems we have a good reason to doubt that Russell's account of indefinite descriptions applies to predicate nominals.

The same considerations do *not* extend unproblematically to *definite* descriptions in predicative position, since (15a) below does appear to give rise to an ambiguity: both (15b) and (15c) seem to be available readings of (15a):

(15a) John is not the mayor.

(15b) ¬[the x: Mayor(x)] (John = x)

(15c) [the x: Mayor(x)] ¬ (John = x)

Nonetheless, Graff (2001) argues plausibly that the ambiguity admits of a pragmatic explanation – that the availability of (15c) is determined by the mutually held assumption that *someone* is the mayor (I have changed her example). To take another case, if I utter, 'Whitehead is not the sole author of *Principia Mathematica*,' the reading according to which 'the sole author of *Principia Mathematica*' takes scope over the negation seems unavailable. The utterance in no way says or implies that *Principia Mathematica* has a single author.

Thus, it looks as if a case can be made against RTPD, since it makes predictions about scope that seem not to be borne out by the data. Yet, there is a question as to the validity of the scope test for quantifierhood. To see why this is so, consider (16a):

(16a) Mary is someone who smokes.

(16a) contains a *quantifier* in predicative position. Russell would render it as (16b):

(16b) [some x: Smokes(x)] (Mary = x)

Yet, negating (16a) does not generate an ambiguity between the readings supplied by (16d/e), since there is no tendency to interpret (16c) as (16e):

(16c) Mary is not someone who smokes.

(16d) ¬[some x: Smokes(x)] (Mary = x)

(16e) [some x: Smokes(x)] ¬ (Mary = x)

Similarly for the modal case:

(17a) John is someone who might have proved Goldbach's conjecture.

(17b) *Poss.* [some x: Prove(x, p)] (x = John)

(17c) [some x: Prove(x, p)] *Poss.* (x = John)

There is no reading on which (17a) entails that someone actually proved Goldbach's conjecture. Thus, (17c) is not an available reading of (17a).

These examples show that a quantifier in predicative position does not invariably give rise to multiple readings when within the scope of negation or other operators. Why this should be the case is not immediately clear, but the evidence suggests that it occurs. If so, the Higginbotham–Graff diagnostic is inapplicable – it does not provide a positive test for the presence of a quantifier: there are some quantifiers that occur in predicative position that seem to take an obligatory narrow scope. It might be argued that all that my examples show is that the predicative occurrences of *someone who* are not quantificational, and precisely because they do not interact in expected ways with negation and related devices. But this would need further argument to be made plausible since the semantic contribution of predicative occurrences of *someone who* appears to be quantificational.

4   Conclusion

We have seen how Russell's characterization of the logical form of description sentences conflicts with a highly plausible proposal regarding incomplete quantification. One way to resolve the tension is to retain the view that descriptions are restricted quantifiers but at the same time to deny the most straightforward implementation of Russell's theory in an account of natural language quantification – namely, [EQ*]. This is to concede that Russell's theory cannot capture the competent speaker's ability to assign propositions to utterances of description sentences. But, as suggested, this is not really all that much of a worry, since [EQ*] appears to be unreasonably strong in any case. In addition, a close relative of Russell's theory remains viable. The status of RTPD is a bit more problematic. Although there are no serious arguments against the view, it can hardly be said to be independently motivated. There are other issues that intersect with the ones discussed which I have not been able to cover – the referential/attributive distinction, the 'implicit' approach to incompleteness, the Russellian treatment of unbound anaphora, to name but a few. Publications addressing these topics can be found under Further reading below.

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