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Davidson, Correspondence Truth and the Frege–Gödel–Church Argument

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This paper argues for a conditional claim concerning a famous argument—developed by Church in elucidation of some remarks by Frege to the effect that the *bedeutung* of a sentence is the sentence's truth-value—the Frege–Gödel–Church argument, or FGC for short. The point we make is this: if, and just to the extent that, Arthur Smullyan's argument against Quine's use of FGC is sound, then essentially the same rejoinder disposes also of Davidson's use of FGC against 'correspondence' theories of truth. We thus dispute a contention by Professor Davidson that it is coherent to accept that Smullyan's rejoinder takes away the force of Quine's version of FGC, while still consistently using FGC to establish that if true sentences (or utterances) correspond to anything, they all correspond to the same thing. We show that the differences between the cases discussed by Smullyan and Davidson's version of FGC on which Davidson relies for his contention are irrelevant to the point under dispute.

1. The Frege–Gödel–Church argument

The claims of this paper concern a famous argument developed by Church (1956) in elucidation of some remarks by Frege to the effect that the *bedeutung* of a sentence is the sentence's truth-value, and also found in a more general form in Gödel (1944). The argument is sometimes referred to (under the influence of Barwise and Perry 1981) as the 'slingshot'; we shall refer to it as the Frege–Gödel–Church argument, or FGC for short. Notoriously, both Quine and Davidson have had recourse to FGC at several points in their respective works.

Let us first review the aspects of FGC which are relevant to our present concerns. As anyone with some training in contemporary philosophy of language will know, there are several paragraphs in Frege's 'On Sense and Reference' which consist of some not very convincing remarks intended to sustain the following claim: *If sentences have signification, their signification is their truth-value* (referred to as (*) hereafter). (Following the suggestion by Gödel, in the text we quote below, we prefer the words 'signify' and 'signification' as translations for *bedeuten* and *bedeutung*, because they more exactly convey the ordinary meaning and connotation of the German words than the more commonly used 'refer' and 'reference'.)

In Frege's paper, 'signify' and 'signification' are theoretical terms, whose theoretical role in semantic theory has been explained earlier in the paper with respect to singular terms—by contrasting it with a different theoretical role, that referred to with 'express a sense' and 'sense' (*Sinn*, in German). (It is clear from Frege's examples and considerations in 'On Sense and Reference' that the category of singular terms includes at least proper names and definite descriptions, with the latter as the paradigm case; and it is clear from examples given in his later works, like 'The Thought', that it includes also indexicals.) By the time he reaches the defence of (*), Frege's point about singular terms has been that any semantic account of a language that is at all like natural languages has to ascribe two related features to any singular term—

signification and sense. The *signification* of a singular term is that object, semantically associated with the term by whatever means semantic features are associated with expressions, relative to which the truth-value of assertoric utterances of sentences where the term 'primitively' occurs is to be evaluated. It follows from the definition of 'language mastery' that a language-user who has mastered the use of a singular term knows its semantic features; in particular, he knows the term's signification. However, Frege argues forcefully that there must be a further semantic feature of any singular term which a competent speaker must know—as an aspect of his semantic competence—namely, the term's *sense*. Were this consequence soundly obtained, it would immediately follow—again by definition, this time of 'semantic competence' —the contention previously made, that any semantic account of a language that is at all like natural languages has to ascribe two related features to any singular term—signification and sense.

The contrasting qualifier for 'primitively' in the preceding paragraph is 'derivatively'. The presupposition on the basis of which this qualification is added might be made explicit in the following way.[1] There are at least two types of 'position' or 'context' where singular terms might occur in ordinary discourse—the first, *direct occurrences*, paradigmatically exemplified by the occurrence of 'Hesperus' in 'Manuel said: "Hesperus is visible at dusk"', and the second, *indirect occurrences*, by the occurrence of that same term in 'Manuel said that Hesperus is visible at dusk'—which are *derivative* with respect to other primitive occurrences of the same terms. (The crucial concept of 'position' or 'context' alludes to locations in the logical syntax of a sentence: they are to be specified by a theory making explicit the compositional articulation relative to which the semantic properties of semantically complex expressions, particularly sentences, are determined by the semantic properties of their proper parts.) *Primitive occurrences* of 'Hesperus' are paradigmatically exemplified by its occurrence in the sentence embedded in the preceding instances—'Hesperus is visible at dusk'. Direct and indirect occurrences are *derivative* relative to primitive occurrences in the sense that the way the terms work when they are in the former can only be explained relative to some of the properties they have when they are in the latter; the former therefore presuppose the existence of the latter.

After offering his well-known argument to the effect that knowledge of signification can be only a part of a competent speaker's mastery of the semantic features of a singular term, which must be supplemented by his knowledge of the term's sense, Frege sets out to establish that a similar distinction, to be taken into consideration in any semantic theorizing, holds also for sentences. Claim (*) is part of this ulterior argument; together with the acceptance of the antecedent of (*), the argument takes us to a surprising conclusion. To accept the antecedent of (*) is reasonable enough; let us review its justification. It has been assumed that the signification of singular terms is their truth-appraisal import. Assertoric utterances of sentences are evaluatable as true or false; this is a crucial semantic feature they have. They are thus evaluatable relative to some semantic features they possess; and those semantic features, in their turn, are determined by their parts. For those parts which are singular terms, the semantic feature in question (their truth-appraisal import) is their signification. Now, sentences themselves are parts also of longer sentences (of negative sentences, conditionals, disjunctions and conjunctions, etc; Frege also gave semantic arguments

1 The considerations which follow are present only implicitly in Frege's work—if present at all. For a justification for the claim about the derivative status of direct occurrences, see García-Carpintero 1994.

for thinking of quantified sentences, even if it is not apparent at first sight, as having less complex sentences as proper parts), themselves uttered with assertoric force, themselves true or false. The truth-value of sentences which have other sentences as proper parts will depend also on their semantic features; and it is only natural (and justifiable on the basis of philosophical argument) to think that these semantic features will depend in part on a certain semantic property of the constituent sentences. This will be, by parity of reasoning with the case of singular terms, the signification of sentences. Of course, similar considerations could be advanced to argue that predicates also will have a signification; Frege does not give them in 'On Sense and Reference', but took them up in an unpublished paper.

Not only is it natural to think that sentences have signification; once the rationale for the distinction between sense and signification is understood and accepted for singular terms, and once it is accepted that sentences themselves have signification, it does not seem at all difficult to accept the distinction for sentences. In fact, on the basis of the same considerations as before, it can be plausibly claimed that, while the signification of 'Hesperus is visible at dusk' and 'Phosphorus is visible at dusk' is the same (they make the same contribution to those semantic features of sentences like 'Hesperus is not visible at dusk' and 'Phosphorus is not visible at dusk' relative to which these sentences are to be appraised as true or false), their cognitive significance must differ; for a competent speaker would probably reject 'Hesperus is not visible at dusk', while he might well suspend judgement regarding—or even accept—'Phosphorus is not visible at dusk'. However, if (*) is true, to extend to sentences the distinction between sense and signification will be obviously mandatory.

As we have said, Frege's argument for (*) is not convincing. But Church gave a forceful argument, which can be taken to have been inspired by some of the remarks Frege made. The argument consists in contending that, no matter what may be the signification of sentences, each of sentences (1)–(4) have the same signification:

(1) Sir Walter Scott is the author of *Waverley*.
(2) Sir Walter Scott is the man who wrote the twenty-nine *Waverley* novels altogether.
(3) The number, such that Sir Walter Scott is the man who wrote that many *Waverley* novels altogether, is twenty-nine.
(4) The number of counties in Utah is twenty-nine.

Church's reason for the claim that (1)–(2) and (3)–(4) have the same signification is that they differ only in containing singular terms with the same signification. This is defended on the basis of the earlier Fregean considerations for singular terms. Church's reason for the claim that (2)–(3) have the same signification is that they are 'nearly' synonymous.[2] Now, it seems clear that the only semantic feature that (1) and (4) can possibly retain in common, after transformations of the two kinds involved, is their truth-value.

Church's argument, of course, concerns a particular set of examples. However, it does not seem especially problematic to assume that, upon performing transformations of the two types used in passing from (1) to (4), a similar conclusion could be obtained for any sentence. Kurt Gödel made clear some assumptions on the basis of which a general version of the argument could be formulated. Also he presented the

2 Church 1956, 25.

argument in a context which is relevant for our present concerns, namely, his discussion of Russell's theory of descriptions.[3] This is Gödel's text:

> An interesting example of Russell's analysis of the fundamental logical concepts is his treatment of the definite article 'the'. The problem is: what do the so-called descriptive phrases... denote or signify [in footnote: 'I use the term "signify" in the sequel because it corresponds to the German word *bedeuten* which Frege, who first treated the question under consideration, used in this connection.'] and what is the meaning of sentences in which they occur? The apparent obvious answer that, e.g., 'the author of *Waverley*' signifies Walter Scott, leads to unexpected difficulties. For, if we admit the further apparently obvious axiom, that the signification of a composite expression, containing constituents which have themselves a signification, depends only on the signification of the constituents (not on the manner in which this signification is expressed), then it follows that the sentence 'Scott is the author of *Waverley*' signifies the same thing as 'Scott is Scott'; and this again leads almost inevitably to the conclusion that all true sentences have the same signification (as well as all false ones). [In footnote: 'The only further assumptions one would need in order to obtain a rigorous proof would be: (1) that "φ(a)" and the proposition "*a* is the object which has the property φ and is identical with *a*" mean the same thing and (2) that every proposition "speaks about something," i.e., can be brought to the form $\varphi(a)$. Furthermore one would have to use the fact that for any two objects *a*, *b*, there exists a true proposition of the form $\varphi(a, b)$ as, e.g., $a \neq b$ or $a = a \cdot b = b$.'][4]

Gödel does not actually provide us with the argument, but it does not require an exaggerated amount of extrapolation to reconstruct it from his indications. (The following is taken from García-Carpintero 1988, 271–2.) Let us first list the assumptions Gödel mentions.

(i) Descriptive phrases signify their referents.
(ii) The signification of the whole is a function of the signification of the parts.
(iii) 'φ(a)' and the proposition '*a* is the object which has the property φ and is identical with *a*' mean the same thing.
(iv) Every proposition can be brought to the form $\varphi(a)$.
(v) For any two objects *a*, *b*, there exists a true proposition of the form $\varphi(a,b)$.

Let σ and ρ be two true sentences. Then, relative to the assumptions, all these equivalences hold logically:

(1) $\sigma \equiv \tau(a)$ (assumption (iv)).
(2) $\tau(a) \equiv a = \iota x(\tau(x) \& x = a)$ ((1), assumption (iii)).
(3) $\rho \equiv \phi(b)$ (assumption (iv)).
(4) $\phi(b) \equiv b = \iota x(\phi(x) \& x = b)$ ((3), assumption (iii)).
(5) There is a true proposition with the form $\Psi(a, b)$ (assumption (v)).

3 The present paper was completed prior to the appearance of S. Neale's 'The Philosophical Significance of Gödel's Slingshot', Mind **104** (1995). There is some overlap between the considerations which follow and Neal's paper, although the main point we strive to make and the argumentative drive are different. We are, however, indebted to Neale's thorough examination and defence of Russell's theory of descriptions in his 1990 work.

4 Gödel 1944, 450.

(6) $\Psi(a,b) \equiv a = \iota x(\Psi(x,b) \,\&\, x = a)$ ((5), assumption (iii)).
(7) $\Psi(a,b) \equiv b = \iota x(\Psi(a,x) \,\&\, x = b)$ ((5), assumption (iii)).

But then all these steps preserve signification:

(8) σ.
(9) $a = \iota x(\tau(x) \,\&\, x = a)$ ((8), (1), (2)).
(10) $a = \iota x(\Psi(x,b) \,\&\, x = a)$ ((9), assumptions (i) and (ii)).
(11) $\Psi(a,b)$ ((10), (6)).
(12) $b = \iota x(\Psi(a,x) \,\&\, x = b)$ ((11), (7)).
(13) $b = \iota x(\phi(x) \,\&\, x = b)$ ((12), assumptions (i) and (ii)).
(14) ρ ((13), (3), (4)).

Assumptions (i) and (ii) are the ones Church uses for his claim that (1)–(2), (3)–(4) have the same signification. Assumption (iii) corresponds to Church's reason for his claim that (2)–(3) have the same signification. The other two assumptions Gödel makes are necessary to a complete general version of the argument, instead of one applying to specific sentences. It seems justified therefore to consider Gödel's version a general form of the argument found in Church.

2. Quine's version of FGC and Smullyan's rejoinder

Quine uses a version of FGC in connection with his criticisms of quantified modal logic—the third and conceptually most dangerous grade of modal involvement. Perhaps the clearest and most balanced discussion invoking FGC is Quine's 1953 paper. Due to space limitations, we shall restrict ourselves to a summary of what we take Quine to have been aiming at, without attempting either a full discussion or even an exegetical justification. A more comprehensive exposition can be found in ch. 1 of Pérez Otero (1996)—from where this brief summary is taken.

Quine wants to object to the possibility of making sense of *de re* quantified modal statements, taking *de re* in the sense he himself explains (Quine 1956) regarding propositional attitudes; that is to say, in the 'relational' sense of 'necessarily, some number is greater than seven' (to be rendered in logical notation as '$\exists x$ (x is a number $\wedge$ $\Box x > 7$)') corresponding to the relational sense of 'I want a sloop' (to be rendered '$\exists x$ (x is a sloop $\wedge$ I want x)'). To that end, he links the intelligibility of 'quantifying into' a given 'position' to the occurrences of the singular terms occupying that position being 'purely referential'. 'I call an occurrence of a singular term in a statement purely referential…if, roughly speaking, the term serves in that particular context simply to refer to its object' (Quine 1953, 160). On the basis of this intuitive notion, he then defines 'a context as *referentially opaque* when, by putting a statement ϕ into that context, we can cause a purely referential occurrence in ϕ to be not purely referential in the whole context. E.g., the context "'…' contains just three characters" is referentially opaque' (1953, 160–1). Finally, Quine relates the 'pure referentiality' of the occurrence of a given singular term in a given position to that position's openness to unrestricted applications of the principle of substitutive—'given a true statement of identity, one of its two terms may be substituted for the other in any true statement and the result will be true' (Quine 1980, 139). The reason is that:

> Failure of substitutivity reveals…that the occurrence to be supplanted is not *purely referential*, that is, that the statement depends not only on the object but on the form of the name. For it is clear that whatever can be affirmed about the object remains true when we refer to the object by any other name' (Quine 1980, 140).

It is in this context that Quine resorts to a version of the slingshot. His own version attempts to show that any operator *F*, such that the 'context' on which it operates is not referentially opaque, is truth-functional. ('An occurrence of a statement as a part of a longer statement is called *truth-functional* if, whenever we supplant the contained statement by another statement having the same truth value, the containing statement remains unchanged in truth value' (Quine 1953, 161).) In the presence of the considerations in the previous paragraph, the soundness of the argument would be devastating for quantified modal logic (applying it to the specific case where the operator *F* is '$\Box$'). Quantified modal logic assumes the intelligibility of quantifying into the position occupied by '9' in '$\Box 9 > 7$', producing relational readings of 'necessarily, some number is greater than seven'. If the considerations in the previous paragraph are correct, this requires the pure referentiality of the occurrence of '9' in question. But then, if Quine's argument is sound, its conclusion would involve the 'collapse' of modal distinctions: including '$\Box$' in an assertion of '$\Box 9 > 7$' is utterly redundant, for the class of statements to which '$\Box$' can be added truthfully coincides with the class of true statements not including it.[5]

Quine's argument is indeed a version of FGC, because it uses versions of the two crucial premisses of this argument. The first, that 'singular terms signify their referents', and that it is on this semantic feature that their compositional contribution to the semantic properties of the utterances in which they occur depends—Gödel's assumptions (i) and (ii)—corresponds to Quine's notion of *pure referentiality*, which he takes as justifying unrestricted applications of the principle of substitutivity. The second, that synonymous sentences have the same signification, corresponds to Quine's assumption that logically equivalent sentences make the same semantic contribution. The only other assumption required for Quine's version is that *p* and *q* are sentences with the same truth-value. The argument moves then from (15) to (16) and from (17) to (18) on the basis of the second assumption (given the logical equivalence of

$$\ulcorner p \urcorner \text{ and } \ulcorner \hat{a}(a = \varnothing \wedge p) = \{\varnothing\} \urcorner,$$

and the logical equivalence of

$$\ulcorner q \urcorner \text{ and } \ulcorner \hat{a}(a = \varnothing \wedge q) = \{\varnothing\} \urcorner),$$

and from (16) to (17) on the basis of the first (given that $\ulcorner \hat{a}(a = \varnothing \wedge p) = \hat{a}(a = \varnothing \wedge q) \urcorner$ is a true statement of identity, relative to the assumed identity in truth value of $\ulcorner p \urcorner$ and $\ulcorner q \urcorner$):

(15) $F(p)$.
(16) $F(\hat{a}(a = \varnothing \wedge p) = \{\varnothing\})$.
(17) $F(\hat{a}(a = \varnothing \wedge q) = \{\varnothing\})$.
(18) $F(q)$.

Plenty of considerations could be invoked on behalf of quantified modal logic to stop the unwelcome consequence of Quine's version of FGC, and it is not a concern of this paper to address them all. There are only two which are relevant to our purposes. There is, first, the Fregean line, already suggested earlier in pointing out the distinction between *primitive* and *derivative* occurrences; this line is beautifully developed in Kaplan 1969. Here the Quinean considerations linking quantification to

5 Strictly speaking, the 'collapse' follows under two further reasonable assumptions: $\ulcorner \Box \alpha \rightarrow \alpha \urcorner$ and $\ulcorner \Box \alpha \urcorner$ is not equivalent to $\ulcorner \alpha \wedge \neg \alpha \urcorner$.

pure referentiality and to the unrestricted application of the principle of substitutivity are accepted, but it is observed that singular terms are systematically ambiguous: they have at least a primitive signification, and two derivative significations (their own expression-type, in direct occurrences, and their ordinary senses, in indirect occurrences); and that it does not count as a 'restriction' on the application of logical principles that, when expressions have the potential for ambiguity, this must be kept in mind when applying those principles. The following remarks, then, are sufficient to safeguard from redundancy operators (as distinct from quotation-marks) which allow the construction of non-truth-functional longer statements (like 'John believes that', 'John said that' and '$\Box$') from shorter ones. The singular terms occupying positions occurring in the shorter statements governed by non-truth-functional operators

(i) purely refer to (or signify) entities different from the ones they signify in their primitive occurrences,
(ii) which are the entities quantified over by the quantifiers quantifying into those positions, and
(iii) might, of course, be correctly replaced by other singular terms on the basis of true identity statements, when and only when the terms in those true identity statements have the relevant significations (but not just on the basis of the true identity statements in which they have their primitive significations). In accepting the step from (16) to (17) on the basis of an identity statement which is only true when the singular terms $\ulcorner \hat{a}(a = \varnothing \wedge p)\urcorner$ and $\ulcorner \hat{a}(a = \varnothing \wedge q)\urcorner$ have their *primitive* significations, we fail to notice that these very same terms have *different* significations when occurring in the positions they occupy in (16) and (17), thus begging the question of the truth-functionality of F.

This is, as we said, the *Fregean* line of reply to Quine's version of FGC. Then there is the *Russellian* line to reply to that argument. This is the line developed in Smullyan 1948, grudgingly accepted as correct by Quine himself—who then in response developed a deeper argument against quantified modal logic. Because there are some differences between the purpose to which the original FGC argument was put, and the purpose to which Quine puts his own version, and because Smullyan's argument is devoted to criticizing Quine's version, there is of course some sense in which Smullyan's argument does not immediately affect FGC. However, this is a small point, of little consequence. *Mutatis mutandis*, the ground on which Smullyan's reply is manifestly founded would suffice to dispose also of FGC—as Gödel had already made very clear in the text we quoted earlier.

Smullyan's reply is founded on a Russellian view of language in general and singular terms in particular. According to this view (which we relate not only to the work of Russell, but also to Wittgenstein's *Tractatus* and to some contemporary 'direct reference' theorists), a correct semantic account of the way language works does not require us to ascribe *two* semantic features to every expression in each semantic category; on the contrary, such an ascription can be shown to be misguided. This does not mean that the one semantic feature ascribed to every expression in each semantic category should be taken to be the same—even if it is covered by the single label 'signification'. For the Russellian, there are at least three very different ways of signifying: that proper to the lexical units entering into atomic sentences, which involves some kind of causal or 'acquaintance' relation with the expression's *relata*—objects and properties—and therefore presupposes the existence of those *relata*; that proper to the 'logical constants', which does not require any *specific* causal relation with extralinguistic entities; and that relating sentences to their propositional contents (which need not 'obtain', for sentences may be false).

As a result of these differences, the Russellian has a very different account to offer for the way a genuine singular term, like the proper name 'London', works, and the way a quantifier like 'some city' works. Russell called the latter 'incomplete symbols' (by way of contrasting them with the former, which are *complete* symbols). This is often understood in relation to the contention that a sentence in which 'some city' occurs can be interpreted only after it has been translated into another sentence with a more perspicuous semantic structure, where 'some city' no longer appears as a unit for semantic processing (in contrast with what happens to 'London', which remains such a unit after the translation).[6] However, as several writers have made plain (Gareth Evans (1982, ch. 2) most forcefully; see also Neale 1990), this is not the essential aspect of Russell's idea. We may stick to a more homophonic semantic theory than that which Russell had in mind and still preserve what, for the Russellian, is the crucial semantic distinction between 'London' and 'some city'.

This crucial semantic distinction comes to this: while 'London' simply signifies a particular city, the signification of 'some city' must be understood in terms of the signification of 'city' (also involving, as does that of 'London', some causal or acquaintance relation with an extralinguistic entity) and a certain semantic rule giving the signification of the logical constant 'some'. Something like the following will do to give the reader a rough idea of the semantic rule for the logical constant 'some': $\ulcorner\Psi(\text{some } \zeta)\urcorner$ is true iff there are, among the objects in the domain of discourse in relation to which the sentence is asserted, at least one such that, when taken as signified—in the way proper names signify—by the expression 'x', $\ulcorner\zeta(\text{x})\urcorner$ is true; and there is also at least one among those that satisfy the former condition such that, when taken as signified—in the way proper names signify—by the expression 'x', $\ulcorner\Psi(\text{x})\urcorner$ is true.

The final ingredient of the Russellian view is the notion that definite descriptions like 'the capital of the UK' are 'incomplete symbols' too, functioning as 'some city' works and not as 'London' does. The semantic rule for 'the' would then be something like this: $\ulcorner\Psi(\text{the } \zeta)\urcorner$ is true iff there is, among the objects in the domain of discourse in relation to which the sentence is asserted, exactly one such that, when taken as signified—in the way proper names signify—by the expression 'x', $\ulcorner\zeta(\text{x})\urcorner$ is true; and this same object is also among those such that, when taken as signified—in the way proper names signify—by the expression 'x', $\ulcorner\Psi(\text{x})\urcorner$ is true. As Gödel saw only too clearly (and says so in the previously quoted text), the crucial move in the Russellian play is to reject '[t]he apparent obvious' view on the signification of definite expressions like 'e.g., "the author of Waverley"'; namely, that it 'signifies Walter Scott', because this view 'leads to unexpected difficulties'; that is to say, to the conclusion of the Frege–Gödel–Church argument.

Let us review, to conclude this section, the Russellian rejoinder to Quine's version of FGC developed in Smullyan 1948. Like the theorist taking the Fregean line, the Russellian is free to accept Quine's linking of the possibility of quantifying into a given position to the unrestricted application of the substitutivity principle to occurrences of singular terms *and* definite descriptions in those positions. On the other hand, the Russellian, because he ascribes just one semantic feature to every expression, cannot help himself to the Fregean solution involving contextually driven shifts in the

6 We are abstracting from Russell's practice of taking ordinary proper names to be definite descriptions in disguise.

signification of singular terms. The important point for him is that definite descriptions are not singular terms—the class abstracts ⌈$\hat{a}(a = \varnothing \wedge p)$⌉ and ⌈$\hat{a}(a = \varnothing \wedge q)$' appearing in (16) and (17) should be assimilated to definite descriptions.[7] Now, quantifiers that appear in surface grammar in the way in which they appear in natural language in fact give rise to ambiguities of scope; this is one of the manifestations, for the Russellian, of the difference in semantic behaviour between genuine singular terms and quantifiers that, in natural language, occupy the same positions that singular terms occupy in surface grammar. The fact that definite descriptions give rise to ambiguities of scope, too, is indeed an important piece of evidence favouring the Russellian view.[8]

Let F be an operator (consider 'John believes that', as an instance) forming complex sentences ⌈F(p)⌉ out of less complex sentences p. The Russellian will interpret F as an operator over the only semantic values he ascribes to sentences, the propositions or facts they signify. A sentence like ⌈F(Ψ(some ζ))⌉ will then have two interpretations, a 'relational' and a 'notional' interpretation, corresponding to the two readings of 'John believes that some man betrayed him'. The truth of the sentence interpreted according to the 'relational' reading depends, first, on there being at least one object in the domain such that, when 'x' is taken as signifying it, ⌈ζ(x)⌉ is true; and, second, on the truth of ⌈F(Ψ(x))⌉ relative to one of the singular propositions signified by ⌈Ψ(x)⌉ when 'x' is taken as signifying at least one of the objects mentioned in the first condition. The truth of the sentence interpreted according to the 'notional' reading depends only on whether or not F applies to the general proposition signified by ⌈Ψ(some ζ)⌉.

Consider now an utterance (interpreted according to the 'relational reading'). The Russellian will willingly accept Quine's requirement, that, relative to the truth of ⌈the ξ is the φ⌉ ('the man who betrayed John is his best friend'), ⌈the ξ⌉ should be replaceable in ⌈F(Ψ(the ξ))⌉ ('John believes that the man who betrayed him betrayed him') by ⌈the φ⌉ (thus obtaining 'John believes that his best friend betrayed him') *salva veritate*.[9] In fact, if ⌈the ξ⌉ designates a ζ in relation to which the utterance of ⌈F(Ψ(some ζ))⌉, in the relational reading, was true, then both (F(Ψ(the ξ))⌉ and ⌈F(Ψ(the φ))⌉ should be true. If the sentence ⌈F(Ψ(some ζ))⌉, uttered with the 'relational' reading, is true, then (according to the semantic rule for existential quantifiers previously outlined) there is at least one object in the domain of discourse such that, when 'x' is taken as signifying it, ⌈ζ(x)⌉ is true; and, moreover, some such object makes ⌈F(Ψ(x))⌉ true relative to the singular proposition signified by ⌈Ψ(x)⌉ when 'x' is taken as signifying it. Now, suppose that there is—among the objects in the same domain, relative to which ⌈F(Ψ(the ξ))⌉ is asserted—exactly one such that, when taken as signified by the expression 'x', ⌈ξ(x)⌉ is true; and also that it is one of those objects such that, when 'x' is taken as signifying it, ⌈ζ(x)⌉ is true. Then ⌈F(Ψ(the ξ))⌉ should be true when ⌈the ξ⌉ has the widest scope, according to the semantic rule we outlined for definite descriptions; and moreover ⌈F(Ψ(the φ))⌉ is also true, giving the same scope to the description, if an utterance of ⌈the ξ is the φ⌉ is also true relative to the same domain.

It must be clear that all these considerations are correct by virtue of the fact that

7 Quine (1960, 148–51) develops a version of FGC using definite descriptions, strictly so called. Nothing of substance for the evaluation of the argument turns on the use of class-abstractors, as previous writers have stressed: see Mackie 1974.

8 Evans 1982, ch. 2; and see also Evans 1981.

9 We freely substitute pronouns for proper names following the binding rules of natural language. We should not be slaves of formalistic prejudices in applying and discussing logical principles.

the descriptions themselves are taken with longer scope than the operator—exactly as the existential quantifier was taken in the relational reading. We have conceded thus far Quine's link between quantification into operators whose truth-functionality is in question and the validity of substitutivity. This validates the step from (16) to (17) in Quine's version of FGC. However, the step is valid only because the descriptions implicit in the class abstracts take the widest scope. Once this is taken into consideration, it is clear that the other step (that involved in passing from (15) to (16) and from (17) to (18)) is not valid, relative to the Russellian view of how definite descriptions signify.

The reason is that the 'logical equivalence' or 'near synonymy' of, say, 'the number, such that Sir Walter Scott is the man who wrote that many *Waverley* novels altogether, is twenty-nine' and 'Sir Walter Scott is the man who wrote the twenty-nine *Waverley* novels altogether' cannot authorize either the inference from (†)—'John believes that the number, such that Sir Walter Scott is the man who wrote that many *Waverley* novels altogether, is twenty-nine'—to (‡)—'John believes that Sir Walter Scott is <u>the man who wrote the twenty-nine *Waverley* novels altogether</u>'—or the converse inference from (‡) to (†), *when the underlined definite description in* (‡) *is taken with widest scope*. For one thing, under that reading of the description, (†) entails stronger commitments than does (‡) on the content believed by John, so that the latter might have been true while the former is false. For another, under that same reading of the description, (‡) entails the existence of exactly one such man; this, however, is not entailed by (†), so that the latter might have been true while the former is false.[10] It is important to realize that, even if there were semantically non-Russellian 'referential' definite descriptions, these same considerations would show that the argument is not valid. If the descriptions in (16) and (17) are 'referential', the step from the former to the latter is valid; the other two steps, however, are then, under that interpretation, invalid.

It will help in clarifying matters to express in a fully general way the Russellian source of dissatisfaction with Quine's version of FGC, having in mind Gödel's fully general version of the argument. According to Gödel assumptions (iii) ("$\varphi(a)$" and the proposition "a is the object which has the property φ and is identical with a" mean the same thing) and (iv) (every proposition can be brought to the form $\varphi(a)$), for every sentence p there is a 'near synonymous' or 'logically equivalent' sentence with the form of an identity statement, $\ulcorner a = \iota x(x = a \wedge \varphi(x))\urcorner$, such that every semantically distinctive feature of the sentence's content has been, as it were, lumped together in φ. Now, an operator F forming complex sentences $\ulcorner F(p)\urcorner$ out of less complex sentences p should signify properties of the significations of sentences. If the operator is to be prevented from 'collapsing'—that is to say, from being utterly redundant, by virtue of expressing a property that every sentence with the same truth-value has—it must be sensitive to the *distinctive* semantic character of sentences with the same truth-value. However, this condition simply cannot be satisfied if, on the basis of the 'near synonymy' or 'logical equivalence' of any sentence p with a sentence $\ulcorner a = \iota x(x = a \wedge \varphi(x))\urcorner$ we authorize the inference from $\ulcorner F(p)\urcorner$ to $\ulcorner F(a = \iota x(x = a \wedge \varphi(x)))\urcorner$, or the other way around, *giving wider scope to the description* $\ulcorner \iota x(x = a \wedge \varphi(x))\urcorner$ *with respect to the operator* F *in the latter sentence*. But it is only when the description has wider scope

10 For the sake of giving a counter-example as close as possible to the reasoning in Quine's argument, we have taken only the description in (‡) with wide scope. Of course, the inferences are not sound either if the definite description 'the number, such that Sir Walter Scott is the man who wrote that many *Waverley* novels altogether' in (†) also is taken with wide scope.

than F that its occurrence can be taken to be open to substitution by other descriptions satisfied by the same individual, or by singular terms designating it. Thus, licensing such inferences, from a Russellian viewpoint, is grossly begging the question of the non-triviality of F.

To summarize: on the one hand, substitutivity cannot be authorized as a matter of course for definite descriptions if the non-triviality of F is not to be begged, and the Russellian analysis of definite descriptions indicate the basis on which substitutivity can be illicit without either properly restricting the substitutivity principle or restoring to a Fregean framework: namely, on the basis that descriptions are not singular terms, and cannot be freely substituted when they are under the scope of another operator. On the other hand, it is only by licensing such inferences (by giving the description $[\iota x(x = a \wedge \varphi(x))]$ wider scope than F) that the substitutivity principle can be applied to take us, together with Gödel's assumption (v) 'for any two objects a, b, there exists a true proposition of the form $\varphi(a, b)$') to any other sentence q sharing just the truth-value with p. Hence, any argument such as Quine's is doomed, from a Russellian viewpoint, to give two different interpretations to the same definite descriptions in at least two of its premisses.

It is therefore manifest that Smullyan's rejoinder to Quine's version of FGC has indeed its true root in a Russellian view of how definite descriptions signify—and not in anything peculiar to Quine's argument. Smullyan himself made this clear in this summary:

> In the light of the discussion so far, it may suggest itself to the reader that the modal paradoxes arise not out of any intrinsic absurdity in the use of the modal operators but rather out of the assumption that descriptive phrases are names. It may indeed be the case that the critics of modal logic object primarily not to the use of modal operators but to the method of contextual definition as employed, e.g., in Russell's theory of definite descriptions. In this case, however, it would be in the interest of clarity to indicate the prior grounds on which their objections to the theory of descriptions are based (Smullyan 1948, 39).

Quine accepted the correctness of this diagnosis, albeit grudgingly. We say 'grudgingly' because the rejoinder he gave (Quine 1980, 154) utterly misses the point.[11] It is only in the 1953 paper that he fully acknowledges it:

11 Although Quine 1980 had suffered important revisions in its 1961 edition, the paragraph discussing Smullyan's point was already in the (first) 1953 version. The apparent intention of the text below is to give a rejoinder to Smullyan's argument: 'As stressed in the preceding section, however, referential opacity remains to be reckoned with even when descriptions and other singular terms are eliminated altogether.' Referring back to the preceding section, though, what one finds is the following:

> this expository reversion to our old singular terms is avoidable, as may now be illustrated by re-arguing the meaninglessness of ['$(\exists x)$ (x is necessarily greater than 7)'] in another way. Whatever is greater than 7 is a number, and any given number x greater than 7 can be uniquely determined by any of various conditions, some of which have '$x > 7$' as a *necessary* consequence and some of which do not. One and the same number x is uniquely determined by the condition (32), '$x = \sqrt{x} + \sqrt{x} + \sqrt{x} \neq \sqrt{x}$' and by the condition (33), 'There are exactly x planets', but (32) has '$x > 7$' as a necessary consequence while (33) does not. *Necessary* greatness than 7 makes no sense as applied to a *number* x; necessity attaches only to the connection between '$x > 7$' and the particular method (32), as opposed to (33), of specifying x (Quine 1980, 149).

As a consideration in reply to Smullyan's point, however, this cannot be allowed. The Russellian will express the intuitively correct point Quine makes here—that necessity can 'attach to the connection between "$x > 7$" and the particular method (32), as opposed to (33), of specifying x'—with the remark that '$\iota x(x = \sqrt{x} + \sqrt{x} + \sqrt{x} \neq \sqrt{x})$' fails to be substitutable *salva veritate* by 'ιx(there are exactly x planets)' in 'necessarily, $\iota x(x = \sqrt{x} + \sqrt{x} + \sqrt{x} \neq \sqrt{x}) >$ than 7)' when the description has narrower scope with respect to the modal operator. The Russellian will also accept that, as Quine

> Looking upon quantification as fundamental, and constant singular terms as contextually defined, one must indeed concede the inconclusiveness of a criterion of referential opacity that rests on interchanges of constant singular terms... Fundamentally the proper criterion of referential opacity turns on quantification rather than naming, and is this: a referentially opaque context is one that cannot be properly *quantified into* (with quantifier outside the context and variable inside).... However, to object to necessity as sentence operator on the grounds of referential opacity so defined would be simply to beg the question (Quine 1953, 174).

As we have seen, Quine linked the intelligibility of relational readings of (#), 'necessarily, some number is greater than seven' to the "referential transparency" of the position occupied by the existential quantifier in (#), and he deemed the unrestricted application of substitutivity to occurrences of singular terms in that position as a necessary condition for referential transparency. He developed his version of FGC to show that to prevent the collapse of modal distinctions requires taking the position occupied by the existential quantifier in (#) as opaque; this, on the basis of the previous considerations, would deprive relational readings of meaning. It turns out that a Russellian treatment of definite descriptions (we take it that this is what Quine has in mind when he says '[l]ooking upon quantification as fundamental, and constant singular terms as contextually defined') can avert the collapse without granting the referential opacity of the positions they occupy. There is a clear sense in which, if definite descriptions occur with wider scope than an operator *F*, they are 'purely referential': relative to the semantic behaviour of the operator, they are certainly there 'purely to designate' the entities satisfying them, and thus they can be substituted *salva veritate* by other descriptions satisfied by the same object, or by singular terms designating it. As an alternative, Quine proposes in this text to define the *opacity* of a position in direct relation to the possibility of quantifying into it; but, of course, as he fully acknowledges, to object now to the relational readings on the basis that the context quantified into is referentially opaque, in the new sense, would simply be to assert the intended conclusion without any support. In the rest of the 1953 paper, Quine devotes his efforts to finding further fault with quantified modal logic (the alleged commitment to essentialism); this is a story which does not concern us here.

3. Davidson, correspondence-truth and Smullyan's rejoinder to FGC

As we said at the beginning, this paper aims merely to make a conditional point. We want to show that, once the rationale for Smullyan's reply to Quine's version of FGC is made clear, it is easy to see that essentially the same point applies to other versions—in particular to Davidson's use of a similar argument against 'corre-

wants, this point has nothing to do with singular terms; for descriptions are not singular terms. Still, Quine's conclusion (the meaninglessness of '$(\exists x)$ (x is necessarily greater than 7)', that is to say, that necessity attaches *only* to general propositions in *de dicto* readings) does not follow from this. On the contrary, '$(\exists x)$ (x is necessarily greater than 7)' is entailed by the truth of 'necessarily, $\iota x(x = \sqrt{x} + \sqrt{x} + \sqrt{x} + \sqrt{x}) >$ than 7)' when the description takes wider scope—in which case, of course, the substitution of 'ιx(there are exactly x planets)' for $\iota x(x = \sqrt{x} + \sqrt{x} + \sqrt{x} \neq \sqrt{x})$' is entirely legitimate. Prima facie, at least, a Russellian semantics suggests also the meaningfulness of the wide scope reading; and there is nothing in Quine's considerations here to force us to conclude otherwise. To preclude the possibility of this reading is simply to beg the question, and to miss Smullyan's point.

spondence' theories of truth. We would perhaps have thought this point relatively straightforward, and not worth making had Professor Davidson not argued against it.[12] The fact that he has done so makes us realize that the point is not straightforward, and that it can be of some interest to develop it carefully, as we are trying to do here. Davidson claims that it is coherent to grant that Smullyan's rejoinder takes away the force of Quine's version of FGC while still consistently using FGC to establish that, if true sentences (or utterances) correspond to anything, they all correspond to the same thing. He sustains this contention on the basis of a difference between the cases discussed by Smullyan and Davidson's own version of FGC. We shall attempt to show in this section that the difference Davidson points out is irrelevant to the issue under dispute. Because there are some differences between the versions of FGC, the Smullyan rejoinder will take correspondingly different forms. In Quine's version it is the possibility of combining substitutivity ('referential transparency', according to Quine's first definition of that notion) with non-truth-functionality that is in question, and therefore the rejoinder takes into consideration features relevant to that—particularly, scope distinctions. In the sentences discussed in Church's version, on the other hand, there are no intensional operators, and therefore considerations of scope will not enter. But the Russellian views are equally sufficient to dispose of the argument, as we will show.

In substance, the conditional claim we want to make is already implicit in Gödel's text quoted at length earlier (this is why we would have taken our point as relatively straightforward, had Davidson not disputed it). For Gödel makes clear that a Russellian view of definite descriptions would dispose of the version of FGC he himself outlines—which, like Church's, does not involve the presence of intensional operators in the sentence schemata considered. Moreover, no sustained attempt will be made here to defend Smullyan's line for disposing of FGC. It is worth noting that Gödel, who saw clearly that a Russellian view of definite descriptions would make FGC invalid, concluded his discussion with the following remark: 'I cannot help feeling that the problem raised by Frege's puzzling conclusions has only been evaded by Russell's theory of descriptions and that there is something behind it which is not yet completely understood' (Gödel 1944, 451). We certainly agree that there are more features of FGC than we are able to take up here which should be addressed in any discussion attempting to establish the general invalidity of these arguments on the basis of Russellian considerations.[13] We have therefore made it clear that we undertake no such an ambitious enterprise here—even though we cannot hide our sympathies with the Russellian line, and even though some of the considerations we have made and will still make should be part of any fully-fledged defence of that line.

Professor Davidson claims that Smullyan's rejoinder to Quine does not affect his own version of FGC criticizing 'correspondence' theories of truth, because in his own

12 This, at least, is the point we understood him to have been making in discussion, during a seminar he gave in Girona, Spain, in June 1994, and during the conference 'Inquiries into Donald Davidson's Philosophy of Mind and Language', Institute of Philosophy, University of Leuven, 2–3 December 1994. (The proceedings of this conference, including Davidson's comments, are due to appear in a volume edited by Filip Buekens and Hermann V. Parret.) We apologize if we incorrectly understood Davidson's view; and, of course, even if we did not, the contentions in the main text may well not represent his considered view.

13 Among them: the fact that the signification, or truth-value import, of singular terms other than descriptions apparently cannot be in some cases just the object they refer to (as witnessed by indirect contexts where apparent failures of the substitutivity principle involving proper names can arise); and the fact that the signification of definite descriptions apparently is in some cases just the object they 'refer to' (as witnessed by Donnellan's 'referential' uses).

version he considers only 'extensional' contexts. Indeed, he notes Church's version as a similar case, which would be unaffected by taking Smullyan's line relative to Quine's version. We take it that he does not intend this as the small point that, 'strictly speaking' Smullyan's line concerns only cases in which distinctions of scope are involved, and therefore some departure from his argument is needed when considering applications where intensional operators are not explicitly involved. We assume he intends rather the philosophically interesting point that one might consistently accept Smullyan's reply to Quine's version and still maintain the soundness of Church's Gödel's or Davidson's version. This is what we shall argue against in this section.

This is the relevant text including the use of FGC by Davidson in which we are interested:

> The statement that Naples is farther north than Red Bluff corresponds to the fact that Naples is farther north than Red Bluff, but also, it would seem, to the fact that Red Bluff is farther south than Naples (perhaps these are the same fact). Also to the fact that Red Bluff is farther south than the largest Italian city within thirty miles of Ischia. When we reflect that Naples is the city that satisfies the following description: it is the largest city within thirty miles of Ischia, and such that London is in England, then we begin to suspect that if a statement corresponds to one fact, it corresponds to all.... Indeed, employing principles implicit in our examples, it is easy to confirm the suspicion. The principles are these: if a statement corresponds to the fact described by an expression of the form 'the fact that *p*', then it corresponds to the fact described by 'the fact that *q*' provided either (1) the sentences that replace '*p*' and '*q*' are logically equivalent, or (2) '*p*' differs from '*q*' only in that a singular term has been replaced by a coextensive singular term. The confirming argument is this. Let '*s*' abbreviate some true sentence. Then surely the statement that *s* corresponds to the fact that *s*. But we may substitute for the second '*s*' the logically equivalent '(the *x* such that *x* is identical with Diogenes and *s*) is identical with (the *x* such that *x* is identical with Diogenes)'. Applying the principle that we may substitute coextensive singular terms, we can substitute '*t*' for '*s*' in the last quoted sentence, provided '*t*' is true. Finally, reversing the first step we conclude that the statement that *s* corresponds to the fact that *t*, where '*s*' and '*t*' are any true sentences (Davidson 1980b, 41–2).

On the basis of this argument—which is of course a version of FGC—Davidson rejects traditional correspondence theories of truth, because 'when spelled out' they lapse 'into the trivial or the empty' (Davidson 1980b, 37). He has endorsed this view quite recently (lamenting, on the strength of this same argument, that he had entertained some—rather peculiar, it must be said—notion of truth as correspondence): 'The real objection to correspondence theories is simpler; it is that there is nothing interesting or instructive to which true sentences might correspond' (Davidson 1990, 303).

Something that we may observe immediately in response to the argument in the text quoted is that it can be disposed of with *literally the same* response that Smullyan gave to Quine's version of FGC. The correspondence theorist who thinks that different true statements may well correspond to different facts is taking the operator *statement* S *corresponds to the fact that* as a potentially non-truth-functional one.[14] When

14 The operator '*statement* S *corresponds to the fact that*', like the operator '*John believes that*', is surely semantically complex. The relevant intensional operator is '*the fact that*'. We are avoiding these nuances.

Davidson claims that the context created by this operator is 'extensional', he cannot, of course, be assuming that it is truth-functional: for this is what he wants to establish. The claim that the context is 'extensional' must therefore correspond to his principle (2) in the above argument; that is to say, to Quine's 'referential transparency', understood relative to the validity of substitutivity. But then it is only too obvious that the correspondence theorist can accept this on the basis of a Russellian understanding of definite descriptions, and exploit the same considerations employed by Smullyan to dispose of Davidson's argument. He will contend that, to the extent that definite descriptions are substitutable when occurring in a position governed by the operator *statement* S *corresponds to the fact that* (thus validating the transition involving Davidson's principle (2)), they are to be deemed as taking wider scope than does the operator. But in that case the other two steps, which require Davidson's principle (1), are not valid—for the reasons we gave earlier. To accept those two steps as valid requires on the other hand giving the definite descriptions narrower scope than the operator whose non-truth-functionality we cannot beg, *statement* S *corresponds to the fact that*; in that case, though, the descriptions cannot be taken as substitutable—also for the reasons given earlier.[15]

However, because we want to show how essentially the same response would be enough to defend against this kind of criticism a sort of 'correspondence theory' where this line need not be so obviously applicable, we want to offer another consideration to make our point. Let us first set up the essential ingredients of this sort of 'correspondence theory'—for they provide the argumentative background. In a series of papers, one of us has defended that the kind of disquotational view of truth that some philosophers associate with Tarski's work on truth should be carefully distinguished from a truly Tarskian disquotationalism.[16] Tarskian disquotationalism is a claim about the content of ordinary truth-predicates: it claims that this content can be made explicit through a definition showing *both* that they are

(i) essentially devices for 'semantic ascent' *and*
(ii) 'epistemically neutral', which means that, as far as it depends on the sense of the truth-predicate, bivalence is to be expected and *truth* is an 'eternal' property.

(The latter feature depends on relating the possibility of a Tarskian truth-definition to the correctness of a strongly 'realist' hypothesis on the semantics of the object-language.) As usual, Tarskian truth-concepts are characterized by their ability to satisfy *Convention T*. A truth predicate, Π_Λ, applied to the sentences belonging to a given language Λ,[17] satisfies *Convention T* iff there follows from the definition of Π, for every sentence σ of Λ, a sentence instantiating schema (T):

$$\text{(T)}\quad \text{S is } \Pi_\Lambda \text{ iff p,}$$

where in place of 'S' there is a canonical name of σ, and in place of 'p' a sentence which *expresses the proposition that* σ *expresses* in Λ. (A *canonical name* of an expression is an ordinary quotation or a 'structural-descriptive' name.)

Now, as Tarski himself claimed, a truth-predicate so characterized can be considered to provide a notion of truth as correspondence. It can be so considered in

15 Both Bennett 1988 and Mackie 1974 defend, on Russellian grounds comparable to those mentioned in the text, a more finely-grained notion of fact.

16 See García-Carpintero 1996, 1998, and forthcoming.

17 Properly speaking, a truth-predicate attempting to capture features of the ordinary one should be defined for utterances, not sentences. But nuances such as these are irrelevant here and would only clutter the exposition.

two respects. The first cannot be properly explained here, but has to do with the 'epistemic neutrality' of truth according to Tarskian disquotationalism. The second is the relevant one for present concerns. A proper defence of the view that truth is correspondence in this second sense would require the development of aspects of Tarskian disquotationalism which we cannot take up here; but what we have said thus far will be enough to explain the claim being made, and this is all we need to dwell upon. The sentence to the right-hand side of any alleged instance of (T) is of course used, not mentioned. Moreover, the crucial concept of *proposition* invoked in formulating *Convention T* might well be such that there might be at least two alleged instances of (T) with the following characteristics:

(i) *the same sentence* of the object-language is mentioned on their left-hand sides;
(ii) the sentences used on their right-hand sides have the same truth-value; while
(iii) only one of them is a correct instance of schema (T).

Let us assume that this is indeed the case; such a truth-concept would then count, by Davidson's own standards, as an *interesting* concept of truth as correspondence: true sentences would correspond to the propositions signified by the sentences used in the relevant instances of schema (T); and sentences with the same truth-value would correspond to different entities.

As we said before, Tarski himself seems to have had some such view in mind. Consider the following passage:

> Semantics is a discipline which, speaking loosely, deals with certain relations between expressions of a language and the objects (or 'states of affairs') 'referred to' by those expressions.... While the words 'designates,' 'satisfies,' and 'defines' express relations (between certain expressions and the objects 'referred to' by these expressions), the word 'true' is of a different logical nature: it expresses a property (or denotes a class) of certain expressions, *viz*., of sentences. However, it is easily seen that all the formulations which were given earlier and which aim to explain the meaning of this word...referred not only to sentences themselves, but also to objects 'talked about' by these sentences, or possibly to 'states of affairs' described by them. And, moreover, it turns out that the simplest and the most natural way of obtaining an exact definition of truth is one which involves the use of other semantic notions, e.g., the notion of satisfaction (Tarski 1944, 345).[18]

18 Davidson gives, in our view, a misleading account of this passage. After quoting up to 'viz., of sentences', he says: '[Tarski] goes on to remark that "the simplest and the most natural way" of defining truth goes by way of satisfaction, and this explains his calling truth a semantic concept. But we cannot help noticing that truth is not, by Tarski's own account, a semantic concept' (Davidson 1980a, 67). Davidson thus omits to mention the content of the passage from 'However, it is...' to 'described by them'. Tarski does not therefore 'go on' immediately to the remark on satisfaction, as Davidson's omission may suggest, but instead claims precisely that which Davidson most strongly opposes, namely, that even if truth is logically a property, whether or not it applies to a sentence depends on the existence of a relation between the sentence and 'objects' or 'states of affairs' 'talked about' or 'described' by the sentence. Davidson also omits the 'e.g.' before the reference to satisfaction. This, together with the last sentence in Davidson's text, 'But we cannot help noticing..., *might* suggest that Tarski held a view closer than he in fact did to the rather peculiar one Davidson (1981b) himself defended, namely, that a Tarskian account of truth is 'somehow' a 'correspondence' account by virtue of the fact that the crucial recursion is made for *satisfaction*, which is, after all, a relational notion. We say that as a 'correspondence' view this is rather peculiar because, of course, on such a view every true sentence ends up 'corresponding' to the same thing. In any case, we think it is clear that, whether or not the suggestion is intended, as an interpretation of Tarski it would be incorrect. The 'e.g.' before the mention of satisfaction suggests rather that Tarski is using 'satisfaction' strictly for the relation between singular terms and their semantic values; an exact definition of truth,

The important fact for our present concerns is not whether such a view of truth as correspondence can be philosophically articulated and defended—this goes beyond what we can properly discuss here—but whether Davidson's version of FGC is enough to dispose of it, *even on the assumption that Smullyan's rejoinder to Quine's version is correct*. This is what Professor Davidson claims, and this is what we find untenable.

Davidson's point was that Smullyan's response essentially depends on scope distinctions, which would require the presence of some intensional operator in the sentences in relation to which the FGC-like considerations are made. Davidson then perhaps could grant that the correspondence theorist arguing against the version of FGC in his 1980b paper we quoted earlier might have resorted to a Smullyanesque escape, by invoking the intensionality of the operator *statement S corresponds to the fact that*. His point is that no such route is open to the *Tarskian* correspondence theorist we have described in broad outline, because the operator *S is true if and only if* is 'extensional'.

This is what we take to be a mistake. Davidson mentioned Church's version of FGC, as another case where the potential objector to FGC is precluded from the Smullyan type of response. Let us follow him in considering this case for the sake of having a clear paradigm for later comparison. Now, Church's argument is, as we saw, an attempt to establish the 'puzzling' (in Gödel's opinion) Fregean view that the significations of sentences are their truth-values. The argument's crucial assumptions, as we indicated previously, are Gödel's (i)–(iii). The Russellian concedes that the signification of sentences which differ only in containing some expressions with the same signification should be the same (Gödel's assumption (ii)), and also that 'near synonymous' sentences have the same signification (essentially, Gödel's assumption (iii)). However, he is not prepared to grant assumption (i), that definite descriptions signify their Fregean referents. This is the main Russellian point: it is this that vitiates Church's version of FGC. And this is what Gödel saw clearly (although, as we have seen, he was skeptical about this rejoinder). This is the main Russellian point because it is the crucial move in obtaining a more finely-grained notion of what sentences signify; and to have a more finely-grained notion of the signification of sentences is the *sine qua non* condition to make it at all possible to have a semantic theory where expressions have just one semantic feature. As we have made clear, Gödel's version of FGC makes it manifest that, under the assumption that every semantically distinctive feature of what a sentence says can be comprised within a definite description in a sentence logically equivalent to it, to assume the interchangeability *salva significatione* of co-referential definite description is to grossly beg the question which is under consideration.

Now, of course, Smullyan's argument involves specific considerations on scope distinctions: they are required to treat Quine's version of FGC. But, as Smullyan himself made clear, they depend ultimately on what we have just described as the crucial Russellian point. We cannot see another way of accepting Smullyan's reply to Quine's version of FGC (which requires combining the possibility of having correct applications of substitutivity to definite descriptions with the possibility of non-truth-functional operators) other than accepting a Russellian view on the signification of definite descriptions. Now, on such a Russellian view Church's version of FGC is not correct (the steps from (1) to (2) and from (3) to (4) are not valid); neither is Gödel's

then, requires us to take into account other semantic relations over and above satisfaction. And, even aside from that, it seems clear to us that Tarski's intention is to justify why, even if 'true' is a predicate, *truth* is 'by his own account', a semantic concept after all.

version—as, of course, he indicates. Now, helping himself to a Russellian view of definite descriptions, and exactly on the same grounds, the Tarskian correspondence theorist can combine the acceptance of the extensionality of the operator S *is true if and only if* with the contention that, while (19) is a correct instance of schema T, (20) is not:

(19) 'L'estel del matí es veu al matí' is a true Catalan sentence iff the morning star is visible in the morning.

(20) 'L'estel del matí es veu al matí' is a true Catalan sentence iff the evening star is visible in the morning.

His reason will of course be that the sentences used on the right-hand sides of (19) and (20) signify different propositions—in view of the fact that 'the morning star' and 'the evening star' have different significations. To assume otherwise, on the basis of the contention that co-referential definite descriptions make the same propositional contribution, is simply to beg the question.

The lesson is not terribly momentous, but seems to be correct anyway: either we are prepared to defend that the 'slingshot' works in all cases, or we look for different arguments to make those points that previously we made on the basis of some versions of it.

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