

The Semantics and Pragmatics of Complex Demonstratives

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Misled by grammar, the great majority of logicians who have dealt with this question have dealt with it on mistaken lines. They have regarded grammatical form as a surer guide in analysis than, in fact, it is.

—Bertrand Russell

Complex demonstratives, expressions of the form “That F”, “These Fs”, etc., have traditionally been taken to be referring terms. Yet they exhibit many of the features of quantified noun phrases. This has led some philosophers to suggest that demonstrative determiners are a special kind of quantifier, which can be paraphrased using a context sensitive definite description. Both these views contain elements of the truth, though each is mistaken. We advance a novel account of the semantic form of complex demonstratives that shows how to reconcile the view that they function like quantified noun phrases with the view that simple demonstratives function as context sensitive referring terms wherever they occur. If we are right, previous accounts of complex demonstratives have misconceived their semantic role; and philosophers relying on the majority view in employing complex demonstratives in analysis have proceeded on a false assumption.

1. Introduction

Ever since Russell, simple demonstratives¹ have been championed as the paradigm of a referring term whose meaning on an occasion of use is simply the object or objects to which it refers. Russell thought at one time that demonstrative singular terms were the only genuine logically proper names, and that only thoughts expressed using them were genuinely singular thoughts. Demonstratives have long been thought—as on Russell’s view—to express a primitive form of contact between mind and world.

¹ We use “simple demonstratives” to refer to the demonstrative determiners, “this”, “that”, “these”, and “those”. We do not include in this category the personal pronouns “he”, “she”, “it”, “they”, etc., or the specialized demonstrative words “there”, “then”, and the like. For brevity we will often use “demonstratives” when talking about demonstrative determiners, or “demonstrative expressions” when talking about either simple or complex demonstratives. We concentrate for the most part in our discussion on “that”, but our remarks extend straightforwardly to “this”, “these”, and “those”.

Complex demonstratives, expressions of the form “That *F*”, “Those *F*s”, etc., have been traditionally assimilated to simple demonstratives, that is, like simple demonstratives, they too have been treated as logically proper names in Russell’s sense. Indeed, philosophers discussing simple demonstratives often use *complex* demonstratives in examples without remark. Philosophers who have treated complex demonstratives as referring terms—the majority—have often seen in them a key to understanding how thought reaches out to the world, a key to, in McGinn’s phrase (1981), “the mechanism of reference”.²

Complex demonstratives differ from simple demonstratives by virtue of a nominal. The central question about their semantics is how to understand the contribution of this nominal to sentences in which complex demonstratives occur. This, in turn, is at least the first step in understanding the structure of the thoughts we express using complex demonstratives, and is the key to determining whether an understanding of complex demonstratives in particular will give us insight into how thought reaches out to the world. However, our primary aim in this paper will be to present a novel account of the semantics of complex demonstratives. While the proposal has implications for a wide range of discussions in the philosophy of language and mind, it will not be our aim to trace these out here.

There have been a variety of proposals, each in response to different, and apparently conflicting, intuitions about the way in which the nominal contributes to the semantics of a sentence of the form “That *F* is *G*” (or, more generally, to sentences of the form $\varphi(\text{that } F)$, where “...” in “ $\varphi(\dots)$ ” represents any noun phrase location). In a recent discussion, Larson and Segal (1995, p. 211) distinguish four such ways. (1) It can contribute to the sentence’s truth conditions; (2) it can constrain what the demonstrative expression refers to; (3) it can do both; or (4) it can do neither. Larson and Segal argue for the weakest alternative, (4). Likewise Schiffer (1981) and Perry (1997) hold that complex demonstratives are referring terms that can contribute *only* their referents to the propositions expressed by uses of sentences in which they occur. On this view, the nominal “*F*” in “that *F*” plays only a pragmatic role in bringing our attention to what the speaker is demonstrating with his use of “that”, an object which may still be picked out even if the nominal fails to apply to it. In contrast, Kaplan (1978, 1989a, p. 515, 1989b, p. 583) defends alternative (2), arguing that “that *F*” contributes *no* object to the proposition expressed by a sentence of the form “That *F* is *G*” *unless* its referent is *F*. On Kaplan’s view, in

² McGinn’s account appeals not just to the nominal but also crucially to spatio-temporal relations between a speaker and objects in his environment. See also Peacocke (1981) and Davies (1982) for representatives of the view that the structure of perceptual demonstrative thoughts is represented in part in sentences containing complex demonstratives.

uttering “That man is a thief”, if the object one tries to demonstrate with an utterance of “that” is not a man, nothing is demonstrated.³ On this account, the complex demonstrative in use functions rather like a picture with an arrow attached to it; the picture filters out objects other than those that fit it in the direction the arrow points. McGinn (1981), Peacocke (1981), Davies (1982), Braun (1994), Recanati (1993), and Borg (1999) likewise adopt a view according to which the contribution of the nominal in “That *F* is *G*” is to restrict which object is to satisfy “is *G*”.

All these authors agree that the nominal in a complex demonstrative contributes nothing to the truth conditions of sentences in which it occurs. In contrast, Richard (1993) argues that, in addition to restricting what can be the referent, the nominal contributes to the truth conditions of sentences containing the complex demonstrative; in particular, the sentence “That *F* is *G*” cannot be true unless the referent of the demonstrative is *F*, and is false if the referent is not. In effect, Richard is defending (3). So each of proposals (2)–(4) is held by some philosopher or other.

To anticipate, we will defend something like (1), namely, that the nominal does not semantically constrain what the demonstrative refers to, yet it does contribute to the truth conditions of any sentence in which it occurs. We say *something like* (1), because, as will emerge, we reject an important presupposition of this taxonomy.

Though it looks exhaustive, the classification (1)–(4) is in an important way deficient, because it fails to elicit the most striking division among theories about complex demonstratives. It presupposes they are referring terms.⁴ (This is the presupposition that we will eventually reject, though in a novel way.) Though this has been the dominant view, there are dissenting voices. For complex demonstratives also exhibit many features associated with quantified noun phrases, such as “All philosophers”, “The King of France”, and “Someone in the rain”. Since it is difficult to see how to accommodate these features if complex demonstratives are referring terms, some authors have been led to treat all demonstrative expressions as quantifiers in order to provide a unified account of both simple and complex demonstratives. Taylor (1980), for example, endorses this view, basing his position largely on data pro-

³The nominal in “That *F*” on Kaplan’s view forms part of the nominal of the description α in the representation of it as “dthat(α)”, where the role of α is to determine the referent of “dthat”, but not to express its meaning.

⁴Even apart from this assumption, there is a defect in the taxonomy. The taxonomy is based on the assumption that the only roles the nominal can play are to constrain the referent of the demonstrative, or to contribute to the truth conditions. But it would be possible to treat the nominal as not constraining the referent of the demonstrative or contributing to the truth conditions, but rather constraining whether the predicate is treated as being supplied with the object to which the demonstrative refers. See Higginbotham (1988).

vided by complex demonstratives, data we will review below. Barwise and Cooper (1981) suggest that all noun phrases are generalized quantifiers, including demonstrative constructions. More recently, Neale (1993) has suggested that all *complex* noun phrases should be treated as quantificational, and that demonstratives in particular might be treated as equivalent to certain rigidified definite descriptions in order to bring complex demonstratives into conformity with this thesis. (Davidson (1967) may be construed as anticipating a quantificational treatment similar to Neale's.) Another recent suggestion along these lines, though rather different in some respects from Neale's, is made by Jeffrey King (1999).

It would be fair to conclude from this quick survey that we do not yet understand very well the semantic role of complex demonstratives; we have not yet, to borrow an apt phrase from Higginbotham, seen through "the haze of usage". We will argue that no position that has been held up to now is correct, though each major camp has identified essential features of complex demonstratives. The difficulty for each camp has been that they have either denied or ignored the evidence on which the other bases its view. Both camps have insights that any adequate account of complex demonstratives must accommodate. We will show how to reconcile the view that *demonstratives* are genuinely referring terms with the view that *complex* demonstratives function like restricted quantifiers.

In developing our argument, we will first consider evidence for treating demonstrative expressions as quantifiers rather than referring terms (§2), and then consider how one might try to integrate this suggestion into a semantics for demonstratives (§3). Seeing why the attempt fails will help to uncover the limit of the analogies between the functioning of demonstrative expressions and true quantifiers. We then offer a semantic account which explains the quantifier-like features of complex demonstratives, while retaining the intuitively compelling view that simple demonstratives everywhere they occur are themselves simply context sensitive referring terms (§4). We defend our view against a number of *prima facie* objections in §5 and §6, and conclude in §7. In the appendix, we complete our account of the semantics of demonstratives by formulating a reference clause for simple demonstratives.

2. Quantifier-like features of demonstrative expressions

One of the most striking analogies between demonstratives and quantifier words is that they are *determiners*; like quantifier words, and unlike other indexicals⁵ such as “I”, “he”, “she”, “now”, “there”, etc., demonstratives combine with nominals to form complex noun phrases.⁶ Thus, compare (1)–(3).

- | | |
|-------------------------------------|--|
| (1) Some professor bored us stiff. | Quantifier word + nominal ⇒
noun phrase |
| (2) That professor bored us stiff. | Demonstrative + nominal ⇒
noun phrase |
| (3) *John professor bored us stiff. | Name + nominal ⇏
noun phrase |

(3) is ill formed, whereas (1) and (2) are not. If possible, a theory of complex demonstratives should explain why demonstratives can combine with nominals to form noun phrases that play the same grammatical role as complex quantifier phrases. An appealing hypothesis for why this is so is that (2) is an instance of the same rule that leads to (1), that is, demonstratives are quantifier words and complex demonstratives are quantified noun phrases.

The appeal of this hypothesis is increased by the observation that the nominal in a complex demonstrative does not appear to be semantically inert. If a determiner has existential import, as with “some”, “few”, “the” (represented as “Det_∃”), the instances of the following inference schema are semantically valid:

Det_∃ *F* is/are *G*
So, some *F* is *G*.

So are instances of the schema:

Det_∃ *F* is/are *G*
So, something is *F* and *G*.

⁵ The genitive case for both names and indexicals are exceptions to this rule, e.g., “My hat”, “Mary’s dog”, etc., as are numerical quantifiers, such as “Three men”. We return to these constructions below. There are also some apparent exceptions to the rule barring the use of personal pronouns with nominals to form noun phrases, e.g., “You children had better behave”, “We leaders of the senate have an obligation to see this bill passed”, “Everyone asks us philosophers what we do for a living”. However, we are doubtful that these function semantically as noun phrases, rather than either as subject and appositive (“We, [the] leaders of the senate, have ...”), or, perhaps, as abbreviated non-restrictive relative clauses.

⁶ It is largely this feature of demonstratives that leads Barwise and Cooper, and Neale, to suggest treating demonstrative expressions as quantifiers.

This suggests that demonstrative determiners are quantifier words with existential import since the inference schemata hold for them as well.

Furthermore, sentences such as (4)–(7) do not strike us as ill formed, and it is easy enough to imagine appropriate contexts of utterance (see §5).

- (4) Someone loathes that man to *his* right.
- (5) The man in the white hat hates that man addressing *him*.⁷
- (6) Each woman in this room admires that man whom *she* sees at the podium.
- (7) All of the students hated that professor who flunked *them*.

((4) is adapted from an example of Taylor's.) These data are all perfectly ordinary; each involves a pronoun in the complex demonstrative being bound by the quantifier outside of it. It is difficult to see how to make sense of quantification into complex demonstratives on the assumption that they are referring terms. In this respect, complex demonstratives exhibit important similarities to quantified noun phrases. Compare (4) with (8):

- (8) Someone loathes a man to his right.

If demonstratives were quantifier words, and complex demonstratives were quantified noun phrases, we would have a ready explanation of the intelligibility of (4)–(7).

In addition, pronouns outside the complex demonstrative can be anaphoric on quantifier phrases inside the nominal of a complex demonstrative, as illustrated in (9):

- (9) That shark that took a swimmer off Flager beach last summer attacked him inside the sandbar.

In (9), “a swimmer off Flager beach last summer”, which is a part of the nominal of the complex demonstrative, binds the pronoun “him” in the predicate.

Clearly, we ordinarily associate these features with restricted quantifiers, as in (10)–(11):

- (10) Every man who has a son loves him.
- (11) The woman standing beside a bus is going to board it.

We would have an explanation of these phenomena if “that” were a quantifier word.

It is not clear what account could be given of the phenomena exhibited in (4)–(7) and (9), if “that *F*” is treated as a singular referring term, for that would be to treat a sentence of the form “That *F* is *G*” as constructed from

⁷ Following the Russellian tradition, we assume throughout that definite descriptions are quantified noun phrases.

the matrix “ x is G ” by replacing “ x ” with a singular referring term whose role is to provide an argument for the function expressed by the matrix. This renders mysterious how the material in the nominal could interact semantically with the rest of the sentence.⁸

3. Demonstratives as quantifiers

These analogies between complex demonstratives and restricted quantifiers cast doubt on the traditional view that demonstratives are context sensitive referring terms. Indeed, in view of their grammatical role as determiners, it is not implausible that demonstratives are context sensitive quantifier words, and not context sensitive referring terms. In that case, it should be possible to provide a semantic treatment for demonstratives parallel to that for restricted quantifiers. In this section, we consider how one might try to extend the standard treatment of restricted quantifiers to demonstrative expressions. We take “that” as a representative of the demonstrative determiners. First, we consider and argue against the view that “that” itself might be used as a quantifier word in the metalanguage to give its own semantics. We then consider whether it can be treated as a kind of specialized context sensitive definite description. We reject this as well. This leaves us the task of explaining why complex demonstratives exhibit systematic analogies with quantifiers, the topic of §4.

It will be convenient to formulate our semantics for a regimented language, English*, which is like English except that variables are associated with quantifiers and explicitly introduced argument places, and devices are introduced for indicating scope relations among quantifiers. We will represent an English sentence such as “Everyone brought someone” (on one natural reading) as in (12).

(12) [For every x] [there is some y] (x brought y).

⁸ Other sorts of data suggest to us that the nominal is playing some role in determining the truth conditions of sentences in which it occurs. For example, a sentence like “That player is better than every other”, under its standard interpretation, entails that “There is a player better than every other player”. It’s hard to see how this inference would go through if the nominal “player” were not contributing to the truth conditions of the sentence. This is not to say that there might not be alternative ways of explaining this and others sorts of phenomena we have (and have not) mentioned without treating the nominal as contributing to the truth conditions of sentences in which it occurs. But, as the data adds up, it does become hard to see why one would want to resist doing so.

(12) makes explicit the order in which the quantifiers are to be evaluated. For sentences such as “Few philosophers are rich” we will adopt the standard notation for restricted quantifiers, as in (13), read as “Few x such that x is a philosopher are such that x is rich”.

(13) [Few x : x is a philosopher] (x is rich).

To formulate the suggestion that “that” functions as a quantifier word, rather than a genuine singular referring term, we first regiment English sentences of the form “That is F ” and “That F is G ” into English* as “[That x] (x is F)” and “[That x : x is F] (x is G)”, respectively.

In order to provide a semantics for sentences with demonstratives (henceforth “demonstrative sentences”) in English*, we need to choose a framework in which to articulate our various semantic theses. We adopt a version of the truth-theoretic approach to giving semantics for natural languages pioneered by Davidson.⁹ The theories of complex demonstratives we will be discussing throughout this paper, including the one we will endorse in the next section, do not depend in any way, so far as we can tell, on the truth-theoretic framework we are adopting.

However, once we adopt a truth-theoretic approach to the semantics of demonstratives, and also opt to treat demonstrative expressions as quantifiers, we must identify a structure to be *used* in the metalanguage which, when applied to functions assigning objects to variables, mimics the demonstrative expression *mentioned* in object language sentences for which we are providing satisfaction conditions. To this end, we will first indicate the context relativity of “that” in English* by introducing in our metalanguage the term “that_[s, t]”, whose relativization to speaker, s , and time, t , is indicated by the subscripted variables. Then we propose, as a first pass, to use this expression in the metalanguage in the role of a quantifier word. This yields the treatment in (14).

(14) For all functions f, f' sat_[s, t] “[That x] (x is F)” iff that_[s, t] “ x ” -variant¹⁰ f' of f sat_[s, t] “ x is F ”,

where “ f ” and “ f' ” range over functions that assign an object to each variable, and sat_[s, t] is read as “satisfy(ies) as if used by s at t in English*.”¹¹ As a notional convenience, we suppress universal quantifiers over speakers and times. They will be understood to take wide scope over any other quantifiers. The relativization to speaker and time is to be cashed out in terms of the speaker’s demonstrative¹² intentions, and, in particular, those

⁹ For elaboration and defense, see Lepore (1983), Ludwig (1999), and Lepore and Ludwig (typescript). For a brief discussion of the constraints a truth theory must meet to be used for interpreting object language sentences for context insensitive and context sensitive languages, see note 35.

¹⁰We employ the notation “ f' is an ‘ x ’-variant of f ” to mean “ f' differs from f at most in what it assigns to ‘ x ’”.

which determine with respect to which object, if any, the predicates are to be evaluated. Thus, we might read “that_[s,t] ‘x’-variant f of f ” as “that ‘x’-variant f of f demonstrated by s at t ”.

This proposal, however, is unworkable. The main difficulty lies in the use of the demonstrative on its right hand side.¹³ Since we seek a satisfaction clause which does not express different propositions on different occasions of use, our truth theory, and, hence, (14), cannot employ context sensitive expressions. But if the demonstrative on the right hand side of (14) means the same as “that” in the object language, we have failed to produce a context independent specification of the satisfaction conditions of demonstrative sentences. Using context sensitive terms in giving truth conditions prevents different theorists from expressing the same theory, and must fail to make fully explicit what rules determine the contribution of a context sensitive term to the truth conditions of a sentence in which it appears on an occasion of use. (14) in particular leaves it open that the theorist will give incorrect truth conditions, since what the metalanguage term picks out will depend on what the theorist’s intentions are, and not those of a speaker interpreting an instance of the theorem.

To get around this difficulty we need to introduce in the metalanguage a context insensitive quantifier word appropriately relativized to a speaker and time that provides a quantificational paraphrase of “that” which avoids using it (or a translation) in specifying satisfaction condi-

¹¹ We employ a four-place satisfaction predicate and three-place truth predicate. In each case, the relativization to speaker and time is read as “as if spoken by s at t ”. The satisfaction predicate expresses a relation between a formula in the language, a function, and a speaker and time, which holds when the function satisfies the expression understood in that language relative to the speaker and time as indices for rules determining semantic values for context sensitive elements in the expression. Similarly, the truth predicate expresses a relation between contextual indices, a speaker and time, and a sentence in a language, which holds when the sentence understood relative to the indices in accordance with the axioms of the theory is true. As we will see in the appendix, an additional relativization to a speech act in which a sentence is used is necessary properly to accommodate demonstratives. For the time being, we avoid this complication, which will not affect the points we wish to make about complex demonstratives. We believe speaker and time are sufficient to fix context relative semantic, properties of sentences and expressions relative to speech acts, but should there turn out to be a need for others, this could be accommodated in our framework without undermining any results in this paper.

¹² We use “demonstration” in the sense of “act of referring”, whatever that might turn out to be; so, we do not assume a demonstration must involve a pointing or be of a salient object in the perceptual environment, or, indeed, be of any object in the present environment. Similarly, we use “demonstrate” as equivalent to “refer to”. See Burge (1974) and McGinn (1981) for discussion.

¹³ Another difficulty is that an instantiation of the right hand side of (14) is true only if *the speaker demonstrates functions* at the time. But speakers do not typically use demonstratives to demonstrate functions. Thus, (14) will render false many true uses of demonstrative sentences.

tions for demonstrative sentences. This is in effect the approach adopted by authors who have suggested that demonstratives are equivalent to a specialized definite description (see Neale 1993 and Taylor 1980). They assume that demonstrative sentences can be paraphrased into sentences with quantifiers. So, their aim is to construct a quantifier expression in the metalanguage which functions like a demonstrative to serve as its paraphrase, thereby avoiding the pitfalls of treating “that”, as in (14), as itself a quantifier word *used* in the metalanguage in giving recursive satisfaction conditions, as is customary for “all”, “some”, “the”, “few”, etc.¹⁴

The most natural suggestion is to treat “that” as equivalent (semantically) to “the object actually now demonstrated by me”. This ensures that the definite description has intuitively the right denotation when a speaker uses a demonstrative successfully, that is, the object the speaker then demonstrates. Thus, a truth theory for English*, with obvious axioms, would issue in a theorem like (15).

- (15) “[That x] (x is G)” is true_[s, t] iff *the* x actually demonstrated by s at t is G .

“Actually” is inserted into the predicate in order to rigidify the description so as to accommodate sentences in which demonstratives are embedded in the scope of modal operators, for example, “Necessarily, that is greater than 7”. Complex demonstratives are then handled by treating the nominal as an addition to the restriction on the definite article.

This proposal has the virtue of clearly delivering the right truth-values for sentences in which simple and complex demonstratives are successfully used. This is not surprising, since the definite description chosen to paraphrase the demonstrative was designed to pick out its referent when used successfully. But this is not enough for it to deliver the right semantic account of demonstrative expressions, whose semantic properties differ in several important ways from the proposed paraphrases. This can be illustrated in a number of ways. The key to understanding these objections is to recognize that this account is asking us to take seriously the idea that a language like English, which has demonstrative expressions, can be paraphrased in a language without demonstrative expressions. By so doing, the account will (i) fail to account for the fact that there are vacuous uses of demonstratives, (ii) commit us to uses of demonstratives having scope readings they do not have, and (iii) commit us as well to their having

¹⁴Though we will not argue for it here, we believe that any attempt to treat demonstratives as context sensitive quantifier words which avoids our previous objections will be effectively equivalent to the description paraphrase approach.

entailments which they do not. In short, the account will fail to correctly interpret English demonstratives.

(i) A referring term is vacuous if it has no referent. An utterance of a sentence containing a vacuous term fails to have a truth-value. The idea that demonstratives can have vacuous uses is one that Kaplan has emphasized repeatedly, and which their treatment as quantifier words cannot accommodate. This point extends straightforwardly to the description paraphrase approach to complex demonstratives. Intuitively, someone who gestures to his right saying, “That philosopher is a gymnosophist”, when nothing is to his right, has not said something false, but has failed to say anything at all. In such a situation it is quite unclear how we could assign a truth-value to the utterance. Yet quantifiers have no vacuous uses, since every quantified sentence (other linguistic infelicities aside, such as vagueness or incidental demonstratives elsewhere in the sentence) has a truth-value, even if, like “The first bud of April is the herald of spring”, it fails to secure an object about which one can say something. Though the intuition that complex demonstratives have vacuous uses might be rejected by the hard-nosed advocate of the quantification reading, it gives us a strong *prima facie* reason to look for an alternative account that accommodates it.

(ii) “That” does not permit the same scope ambiguities as its alleged paraphrase. (16), for example, has only one reading:

(16) John believes that that is thin.

However, the result of replacing the demonstrative “that” with “the object now demonstrated by me” in (16) allows the non-equivalent readings¹⁵ (17) and (18).

(17) John believes that (the object now demonstrated by me is thin).

(18) The object now demonstrated by me is such that (John believes that it is thin).

(16) does not admit both of these readings: if a use of (16) is true, then it follows that something at *t* is such that John believes it to be thin. This comports with (18), but not (17). No such inference is warranted from the truth of (17), as used on an occasion, where the description has narrow scope, since (17) could be true even if on the occasion on which someone uses it he fails to demonstrate any object.¹⁶ Since this is never true of a use of (16), it is not ambiguous

¹⁵ This point does not depend on whether the two readings are generated by a genuine syntactical ambiguity in the target sentences, or whether they are generated by conversational dynamics. Either way, the fact that there are not two readings available for (16), though there are for the result of replacing “that” with “the object now demonstrated by me” in (16), shows that “that” is not equivalent to a quantifier.

between (17) and (18), as it should be if the proposal under discussion were correct.

Neale (1993) has suggested that such scope data could be explained on the assumption that “that”, construed as a definite description, always takes wide scope (Schiffer (1981) makes a similar suggestion). Of course, *if* “that” functioned like a definite description, then the data we just surveyed would compel us to treat “that” as always taking wide scope. But we would have no explanation for why this should be so. The restriction is introduced simply to save the theory, and so appears ad hoc. So the data constitute a *prima facie* objection to treating simple demonstratives as quantifiers. Moreover, treating simple demonstratives as referring terms readily explains why if someone truly utters (16), then (18) (taken relative to the same contextual parameters) is true, where the description has wide scope, and why what is asserted in a non-vacuous use of (16) entails that something was believed by John to be thin at that time.

(iii) Finally, the description approach is saddled with entailments the demonstrative sentences it analyzes do not have. If John said, “That is thin” (or “That man is thin”), then one could, if the description approach were correct, truly say, “John said something which entails that something was demonstrated by him”; and it would follow, from what John *said*, that he exists. But while it *may* be true that John demonstrated something, and, if he was sincere, that he intended to, nothing he *said* (or expressed) entails that he did, and nothing he said entails that he exists, any more than anything he *said* (or expressed) entails that he was *speaking English*. These are things we gather from his performance, not from the truth of what he says.

The description approach is a form of mimicry, piggybacking on an independent means for securing a referent for predication as a way of imitating the behavior of demonstratives. It attempts to treat “that” as a quantifier by treating the means by which its referent is determined, namely, by demonstration, as a general condition to be met for singling out an object by way of a definite description. But the fact that it must appeal to an independent means of securing an object for predication shows that it is a counterfeit of the hard coin of demonstration. The same work is being done twice over, but less well the second time around. The act of demonstration itself secures the object for predication. It would be pointless to

¹⁶This shows also, if our account below is correct, that the suggestion that every use of a demonstrative is a complex demonstrative, with apparently simple demonstratives taking “thing” as a suppressed nominal, a suggestion made to us by Kent Bach (and assumed by Barwise and Cooper 1981), cannot be right. For if that were so, then we would find scope ambiguities even for apparently simple demonstratives. But we do not. Furthermore, it seems clear that “that is not a thing”, while false, is not logically false, though “that thing is not a thing” is.

go on to try to secure it a second time by means of the matrix “ x is demonstrated by s at t ”.

The case against treating demonstrative expressions as quantifiers seems decisive. There remains the question of how in the light of this we can explain the analogies between complex demonstratives and quantifier expressions consistently with seeing simple demonstratives as genuine referring terms, and, in particular, how to give a semantics for sentences containing complex demonstratives compatible with this constraint. It is to this task we now turn.

4. *Semantics for complex demonstratives*¹⁷

In light of the difficulties encountered in treating “that” as a quantifier word, it might seem prudent to reconsider the suggestion that complex demonstratives function as referring terms, and that the nominal in the complex demonstrative does not contribute to the truth conditions of the sentence. This might be recommended by the observation that when we use sentences of the form “That F is G ” we are clearly most interested in saying of some demonstrated object that it is G . In fact, it seems that we can succeed in demonstrating an object in order to say it is G , using “That F is G ”, even when it fails to satisfy “ F ” (*contra* Kaplan, et. al.). For example, if someone says, pointing to a white horse, “That unicorn is white”, it seems to make sense to say in response, “That is white, but not a unicorn”. This indicates that we think the speaker has succeeded in demonstrating something, which we in turn demonstrate, even though it is not a unicorn. The nominal, it might be suggested, *plays only a pragmatic role* in helping an auditor to determine which object the speaker is demonstrating in order to say of it that it is G . If the nominal played a semantic role as well, whether an object is demonstrated at all would depend on its satisfying “ F ”; moreover, we have an explanation for the *role* “ F ” plays that does not depend on its being semantic.

However, while an adequate account should explain the possibility of demonstrating an object which fails to satisfy “ F ” when uttering a sen-

¹⁷ In accepting that simple demonstratives are referring terms, we commit ourselves to giving them reference clauses in our truth theory. We will postpone discussion of the form of such reference clauses until the appendix, since they introduce complexities not directly relevant to understanding our main topic, complex demonstratives. For the present, we give satisfaction conditions of complex demonstratives recursively in terms of the expression “the referent of ‘that’ as uttered by s at t ”, abbreviated as “ $\text{Ref}_{[s, t]}(\text{‘that’})$ ”. Our treatment for complex demonstratives is easily amended to accommodate refinements introduced in the appendix.

tence of the form “That F is G ”, and should accommodate the idea that the nominal plays a role in helping an auditor to determine what object is being referred to, the suggestion that the nominal plays no semantic role seems incompatible with the data surveyed in §2. Moreover, such a view would require us to deny that expressions of the form Det + Nominal + Predicate comprise a homogeneous semantic class, because this form functions quite differently depending on whether Det is a quantifier word or a demonstrative. Where expressions seem to be constructed in identical ways out of terms in identical categories, there is a presumption that a compositional semantic theory should exhibit them as having similar semantic structures.

Someone who holds that the nominal plays no semantic role would be committed to saying that all sentences of the form “That F is G ”, no matter what replaces “ F ” (for some fixed replacement for “ G ”), have the *same* (relativized) truth conditions! This view is incompatible with semantic entailment relations into which such sentences enter. As noted in §2, for any determiner with existential import, Det_{\exists} if “ $\text{Det}_{\exists} F$ is (are) G ” is true it follows that “Some F are G ”, and, hence, “There are some F ” are true as well (fixing contextual variables). In fact, it seems we can infer either of “That clown is funny” and “That is a funny clown” from the other, relative to the same demonstratum.¹⁸ Similarly, the truth of uses of “That F is G ” with respect to different objects can provide inductive support for the truth of “All F s are G s”, which could hardly be the case if the truth of “That F is G ” did not require what it was true of to satisfy “ F ”. And while someone could say, without fear of formal contradiction, “That is not a clown”, if he says “That clown is not a clown”, he could only be understood intelligibly if we took him to intend “clown” in different senses in the two occurrences. Likewise, we will accept as true (non-vacuous uses of) such necessitated conditionals as, “Necessarily, if it was that clown in the aviator sunglasses who won the prize, then someone in aviator sunglasses won the prize”, which requires us to think of the nominal of the complex demonstrative contributing to the truth conditions of the sentence in the antecedent by way of its being true of what the speaker demonstrates.¹⁹

Furthermore, again appealing to data presented in §2, the nominal can interact with other elements in the sentence in which the complex demonstrative appears. One can quantify into the nominal, and terms in the sentence can be anaphoric on quantifier expressions in the nominal. It seems

¹⁸ Strawson (1950) claimed that sentences of the form “That F is G ” and “That is the F which is G ” say the same thing. He was on to something, for if we are right (see below), the truth of an utterance of either guarantees the truth of an utterance of the other when “that” is used in each to pick out the same object, at the same time.

not to be an option, then, to treat the nominal as pleonastic, or even to restrict its semantic role to placing a necessary condition on securing a referent for predication. We must take seriously the parallel between sentences of the form “That *F* is *G*” and those of the form “*Q F* is/are *G*”, where “*Q*” is replaced by a quantifier word.

In light of these considerations and our arguments against treating “that” as a quantifier word, we propose the following desiderata on any adequate account of the semantic role of expressions of the form “that *F*”.

- (i) The account must exhibit “that” as a context sensitive singular referring term and not as a quantifier word.
- (ii) The account must show how “that” can be used in “that *F*” to demonstrate an object even though the object demonstrated is not *F*.
- (iii) The account must explain how the nominal in “that *F*” can play a pragmatic role in helping an auditor to determine what the speaker intends to be referring to.
- (iv) The account must exhibit the nominal “*F*” as contributing to the truth conditions of a sentence of the form “That *F* is *G*”, and in particular the account should explain the entailment relations into which “That *F* is *G*” may enter.
- (v) The account must interpret sentences of the form “That *F* is *G*” in a way that exhibits their structure as parallel to that of sentences of the form “*Q F* are *G*”, where “*Q*” is replaced by a quantifier expression, and, in particular, the account must enable us to explain how the nominal in complex demonstratives can interact with other elements in a sentence in the same way as the nominal in restricted quantifier expressions.

In effect (as remarked in note 17), we will meet desiderata (i) and (ii) by giving “that” a reference clause which assigns a referent relative to a context of use (thereby treating it as a context sensitive singular referring term), and then by providing a recursion clause for sentences of the form “That *F* is *G*” in which the semantic contribution of “that” is exhausted by its reference clause. This will meet (ii) because the reference clause will provide conditions for “that” picking out an object independently of any nominal it is concatenated with to form a complex demonstrative. (This terminology is misleading if we are right.) However, as we have seen,

¹⁹This shows decisively that the nominal must contribute to the truth conditions. No account that treats it as merely constraining the referent of the demonstrative can account for the truth of such necessitated conditionals. On their account, it has the form, “Necessarily, if it was *X* who won the prize, then someone wearing aviator sunglasses won the prize”, where “*X*” is a directly referring term. But so construed it is clearly false. Further evidence, which we will not recount here, is provided by considerations involving clefting, which are discussed by Mark Richard (1993). A possible counterexample discussed by Richard is considered in §6.

there appears to be a tension between (i) and (ii), on the one hand, and (iv) and (v), on the other. In what follows, we will reconcile these four desiderata with materials needed to satisfy the pragmatic desideratum (iii), which we return to in the next section.

So far as we can tell, there is just one way to reconcile (i) and (ii) with (iv) and (v). We have rejected interpreting “that” as a quantifier word that functions like “all” or “some” in “All F are G ” or “Some F are G ” because it is a singular referring term. On the other hand, we apparently want whatever object “that” picks out to be, as it were, fed into the construction “ x such that x is F is such that x is G ” in a way that parallels restricted quantification. That is, we want to represent the object which is the referent of “that” as used by the speaker as fed into this construction in a way parallel to the way quantifiers feed objects to this construction. But to do this in full generality within a truth-theory, we must invoke satisfaction, because nominals and predicates are both productive categories, that is, complex ones can be built up out of simpler ones by the usual recursive devices. Because we must interpret constructions of the form “That F is G ” recursively in terms of how we interpret “ F ” and “is G ”, we will continue to represent “That F is G ” in English* as “[That x : x is F] (x is G)”. What we want, then, is for a function f to satisfy “[That x : x is F] (x is G)” iff a function f' , which differs from f at most in that f' assigns to “ x ” what is demonstrated by the speaker in using “that” and which satisfies “ x is F ”, also satisfies “ x is G ”. There will in fact be only one such function because of the requirement that it assign to “ x ” what “that” refers to. Exploiting this fact, we can write out our candidate satisfaction clause as:

- (19) For all functions $f, f \text{ sat}_{[s, t]} \text{ “[That } x: x \text{ is } F \text{] } (x \text{ is } G \text{)”}$ iff [the f' : f' differs from f at most in that f' (“ x ”) = $\text{Ref}_{[s, t]} \text{ (“that”)}$ and $f' \text{ sat}_{[s, t]} \text{ “} x \text{ is } F \text{”}] (f' \text{ sat}_{[s, t]} \text{ “} x \text{ is } G \text{”})$.²⁰

The proposal in (19) shows how to meet desiderata (iv) and (v) *compatibly* with (i) and (ii). Our formulation of (19) is, in fact, *essentially a more precise rewording of our desiderata*. By specifying the semantic contribution of its simple demonstrative constituent using a reference clause, we continue to treat “that” as a singular referring term. However, at the same time we capture the semantic contribution of its nominal to the truth conditions of the sentence in a way that parallels the standard treatment of restricted

²⁰ For the general case, we define the notion of a φ/ν -variant of a function f , as follows:

For any f, f' is a φ/ν -variant of f iff_{df} f' is a ν -variant of f and f' satisfies_[s, t] φ .

The satisfaction clause then is given as follows:

For all functions f , variables ν , predicates φ, ψ containing a free occurrence of ν , $f \text{ sat}_{[s, t]} \text{ “[That } \nu: \varphi \text{] } (\psi \text{)”}$ iff [the $f' : f'$ is a φ/ν -variant of f and $f' (\nu) = \text{Ref}_{[s, t]} \text{ (that)} \text{]} (f' \text{ sat}_{[s, t]} \psi)$.

quantifiers. In effect, we treat English sentences of the form “That F is G ” as sharing interpretive truth conditions with English* sentences of the form “[The x : $x = \text{that}$ and x is F] (x is G)”.²¹ Our desiderata have led us to postulate that sentences of the form “That F is G ” are semantically equivalent to *restricted existentially quantified sentences*, the restrictive clause of which contains a singular referring term, to wit, a demonstrative.²²

This view neatly handles the data we have discussed. It explains the similarity in form between “That F is G ” and “ $Q F$ are G ” by treating the former as having the logical form of “[Qx : $\varphi(x, \text{that})$] (x is G)”, where “ $\varphi(x, \text{that})$ ” represents a complex predicate that contains a demonstrative in an argument place. This makes transparent how the nominal in a complex demonstrative can interact with other elements in a sentence in the way a nominal in a restricted quantifier does (meeting desideratum (v)). This also straightforwardly explains the entailment relations we have noticed (meeting desideratum (iv)). It explains why, for example, relative to a fixed demonstratum, the truth of (a use of) either “That F is G ” or “That is F and G ” allows us to infer the truth of the other, and why from the truth of (a use of) the former we can infer the truth of “Something is F and G ” and “Something is F ”, since relative to a fixed demonstratum the truth of “[The x : $x = \text{that}$ and x is F] (x is G)” suffices for that of “Something is identical with that and it is F and G ”, and vice versa.²³ *At the same time*, the proposal exhibits “that” as a genuine singular referring term (meeting desideratum (i)) whose contribution to a sentence does not depend on the

²¹ Since, on our account, the predicate restriction contains a requirement that ensures at most one thing will satisfy it, we could instead have used, e.g., “some”, “one”, or “all”, in place of “the” in (19). The essential role for these quantifiers is to bind the variables in the nominal and the predicate. Perhaps this partly explains why the quantifier is suppressed: there does not seem to be a single most appropriate quantifier word to use.

²² Quine assimilates complex demonstratives to simple demonstrative referring terms (1960, p. 102). Interestingly, however, when Quine discusses how to regiment language, he suggests “we can assimilate the demonstrative singular terms to singular descriptions, treating “this (that) apple” as “the apple here (there)”” (1960, p. 163), which bears a close resemblance to our proposal. Quine, however, was not aiming for a semantic analysis of demonstrative terms, but a replacement that eliminates them; he treats “here” and “there” as “general terms attributively adjoined to ‘apple’” (1960, p. 163). A near miss.

²³ It has been objected to our treatment that it makes “That F is G ” and “That G is F ” equivalent. It is true that respective utterances of sentences of these two forms, where “that” in each is used to refer to the same object (at the same time) would both be true or false together. But this does not mean that they are *semantically* equivalent, since they are assigned different semantic structures. And of course there would be no reason to hold that they are “cognitively” or pragmatically equivalent either, since the order of elements in a sentence clearly can make a significant difference to the pragmatic import, even when sentences are materially equivalent, as in “I got dressed and went to the office” and “I went to the office and got dressed”; or, if we are right, as in, “That man is a bachelor” and “That bachelor is a man”.

nominal to which it is conjoined (meeting desideratum (ii)). And it explains how the nominal, despite its not semantically constraining the referent of “that” as used by the speaker, can still enter into the sentence’s truth conditions, in the requisite way. Thus, in the case of an utterance of “That unicorn is white”, we can explain how someone can demonstrate something even though there are no unicorns, and why the utterance is false even when someone successfully demonstrates something white. We will also be able to explain why the nominal plays a pragmatic role in helping an auditor to determine which object the speaker intends to be demonstrating. We postpone this until the next section, however, where it plays a role in our defense of our position against some objections. Clearly, the proposal extends straightforwardly to other complex demonstratives. Thus, we can accommodate all the intuitions that pull people in different directions about the semantics of complex demonstratives.²⁴

The account achieves its explanatory goals by foregoing certain traditional assumptions about so-called complex demonstratives, perhaps the chief of which is that expressions of the form “That *F*” are themselves referring terms *if* “that” is. From the perspective afforded by our account, the inclination to treat “that” as a quantifier word, or to treat the nominal “*F*” in “That *F* is *G*” as semantically inert, or not predicated of the object picked out, results from failing to see that combining a demonstrative with a nominal is itself a bit of semantically significant syntax, to be interpreted as a restricted existential quantifier in which a demonstrative appears in the nominal restriction.²⁵

The suggestion that some noun phrases function as quantified noun phrases, even though they lack an explicit quantifier word, should be familiar. Sentences such as “Whales are mammals” and “Men are wicked” are treated as equivalent to “All whales are mammals” and “All men are wicked”, though they contain no explicit quantifier word (see e.g. Neale 1993). Plausibly sentences headed by mass nouns, “Fire is the test of gold”, “Paper is made from pulp”, are quantificational (Koslicki 1999).

²⁴On this view, complex demonstratives function like definite descriptions with nominals that contain a directly referring term; it is a small step to suggest that at least some so-called referential uses of definite descriptions (Donnellan 1966), whose nominals are not uniquely satisfied, are intended to be understood as completed by a demonstrative term picking out the object the speaker intends to be talking about (though not, strictly speaking, part of their semantics). This would account for the sense we have in such cases that a speaker did refer in what he said to the intended object or person though the explicit nominal fails to apply to it.

²⁵This treatment of complex demonstratives supports the thesis advanced by Neale (1993) that every complex noun phrase in English is a restricted quantifier, without having to give up the view that demonstratives everywhere they appear are genuine referring terms. Indeed, the current proposal, which is motivated independently of Neale’s thesis, constitutes powerful support for it, since it shows how to reconcile it with what appears otherwise to be a recalcitrant exception.

Likewise, noun phrases formed with an adjective and proper name, such as “Ancient Rome was the most important city of the Mediterranean”, are plausibly treated as quantificational (in Italian, a definite article is required in this case, “L’antica Roma”). Genitive forms of proper names and indexicals that combine with nominals to form complex noun phrases, as in “John’s beagle” and “His hat”, are standardly treated as equivalent to descriptions in which the referring terms are treated as part of the predicate restriction on the article. Noun phrases such as “Three men”, though headed by a singular referring term, are interpreted as quantifiers. It should not be surprising to find a similar phenomenon with complex noun phrases formed from concatenating demonstratives with nominals. Indeed, with these parallels in mind, our proposal seems like the obvious thing to say about complex demonstratives.

Further support for our position is provided when we turn our attention to plural demonstratives, such as “these” and “those”, for which there appears to be an equivalence between sentences of the form “These/those *F*s are *G*s” and “All these/those *F*s are *G*s”. This suggests that the former is an abbreviated syntactical device for expressing the same thing as the latter. The natural extension of our account to “These/those *F*s are *G*s”, is to say that all things that are among these/those and are *F* are also *G*, which is also the most natural way to interpret “All these/those *F*s are *G*s”.²⁶

It is suggestive that, in many other languages, demonstratives are used in complex noun phrases only in conjunction with a definite or indefinite article, and are then often grammatically adjectives rather than determiners. In Hungarian, for example, “ez” and “az” function by themselves as demonstratives, but when they head noun phrases, a following article is mandatory: “az a lecke”/“This (the) lesson”. In Spanish, “aquel hombre” (“that man”) is equivalent to “el aquel hombre” (“the that man”). In Haitian Creole, demonstratives followed by nominals must be preceded by a determiner. In Welsh and Dehu, the pattern is, article + noun + demonstrative, and the demonstrative functions grammatically as an adjective

²⁶ One might object that if someone demonstrates non-*F* things, the sentence will come out true rather than false. The grounds are that “[All *x*: *x* is one of these and *x* is *F*] (*x* is *G*)” is materially equivalent to “For all *x*, if *x* is one of these and *x* is *F*, then *x* is *G*”, which is vacuously true when nothing demonstrated is *F*. The proposal can be modified to avoid this difficulty by employing the plural definite description in place of “all”, representing “These *F*s are *G*s” as “[The *x*’s: *x* is one of these and *x* is *F*] (*x* is *G*)”. However, this will undermine the suggestion that “These *F*s are *G*” is equivalent to “All these *F*s are *G*s”. This objection is founded on a view that has become prominent this century, namely, that “All *F*s are *G*” is equivalent to “All *x* are such that if *x* is *F*, then *x* is *G*”. Intuitions about English sentences notoriously, however, fail to conform to this paradigm, and once we see that in general the structure “*Q F* are *G*” is not paraphrasable into classical first order logic, there is good reason to re-examine it.

(Dryer 1992, Sec. 7.2). In Greek, the usual pattern is, demonstrative + definite article + noun. In Hebrew, the most common pattern is “the man the this”, as in “ha-ish ha-ze”; just as “ha-ish ha-tov”, literally “the-man the-good”, is rendered as “the good man”, so “ha-ish ha-tov ha-ze”, literally “the-man the-good the-this”, is rendered as “this good man”. In Mandingo, a mande language spoken in West Africa, a tonal D, which is a determiner, is always present when a demonstrative is adjoined to a noun: “muso H nin” = “this woman”. Here “muso” means “wife”, “H” is the high tone D, and “nin” is a demonstrative; but when “nin” is used by itself, it is never used with the tonal D. A common pattern in Polynesian languages is article + noun + demonstrative. These data from other languages suggest also that we should not be surprised by the idea that complex demonstratives are, semantically, quantified noun phrases containing a demonstrative in the predicate restriction. However, while these data from other languages are suggestive, the case in the end, of course, rests on the semantic data we have assembled for English.

In the next two sections we defend our proposal against some *prima facie* difficulties, first, against worries about the coherence of quantifying into complex demonstratives, and then against various worries about treating the nominals in complex demonstratives as contributing semantically to the truth conditions of sentences in which they appear.

5. Quantifying in

Examples of apparently coherent quantification into the nominals of complex demonstratives supply some of the most important evidence for denying that they are referring terms. Recall (4) and (5).

(4) Someone loathes that man to *his* right.²⁷

(5) The man in the white hat hates that man addressing *him*.

These seem unproblematic, and recommend a quantificational treatment. However, there are some cases in which quantification into the nominal of a complex demonstrative seems infelicitous. This can be taken to suggest that not all is right with the proposal to treat complex demonstratives as quantified noun phrases. We can (almost) always comfortably quantify

²⁷ Higginbotham (1988) says that sentences like (4) are ungrammatical, and tries to explain away the intuition as confusing a referential use of “someone” with a quantificational use. We do not see how one could insist on this except in the light of a theory that requires it. In any case, one could intelligibly add to (4), “But I’m not going to say who he, or they, may be”, which indicates that the use need not be referential.

into complex noun phrases traditionally recognized as quantified noun phrases, as in (20),

(20) *Every man* loves the woman who is *his* mother.

But there are cases in which quantification into the nominal of a complex demonstrative seems bizarre, as in (21) (where we imagine the speaker pointing to some particular woman).

(21) ?*Every man* loves that woman who is *his* mother.²⁸

Some authors have suggested that sentences like (21) are semantically incoherent (see Davies, Neale, and Taylor). But if our treatment is correct, (21) is equivalent to the perfectly well-formed English* (22),

(22) [For every y : y is a man] [the x : $x = that$ and x is a woman who is the mother of y] (y loves x).

So, we must defend the view that whatever seems odd about (21) is not due to incoherence in its construction. We believe that the sense that there is something odd or inappropriate about utterances of sentences like (21) is due to solely to the difficulty in imagining circumstances in which it would be reasonable to assert them.

As Taylor notes, it is not easy to see what could prevent the inference from (23) to (24) by existential generalization.

(23) James is marrying that woman he is kissing.

(24) Someone is marrying that woman he is kissing.

Clearly, the sentential matrix “ x is marrying that woman x is kissing” can be satisfied by an object; thus, we can surely say that some object satisfies it; or, in the material mode; something is such that it is marrying that woman it is kissing. Our account makes sense of this possibility (without the desperate expedient of treating demonstratives as quantifier words). Moreover, it is easy to think up perfectly normal sentences in which it is acceptable to bind variables inside a complex demonstrative by a universal quantifier from outside. Our earlier (6) provides an example:

(6) *Each woman in this room* admires that man whom she sees at the podium.

It is easy to see that there can be demonstrative uses of “that” in (6). The speaker may be pointing at one of two men everyone sees at the podium. A true assertion of (6) in the imagined circumstances would clearly

²⁸ Sometimes, of course, “that” is pressed into service as a variant of “the”, and one could imagine someone uttering (21) with that in mind. We are not concerned with such uses of “that”, but rather with demonstrative uses. Our proposal requires that there be demonstrative uses of “that” in complex demonstratives that contain pronouns of cross-reference bound by quantifiers outside the scope of the complex demonstrative. The objection we consider here is that “demonstrative uses” of complex demonstratives are not compatible with treating them as restricted quantifiers because of the oddity of such uses in sentences like (21).

involve a demonstration, although a universal quantifier binds a variable inside the complex demonstrative. No puzzle arises about its assertion because it is clear that there is a single man they see whom they all admire. So, there cannot be anything semantically amiss with quantifying into complex demonstratives.

In light of this, we should conclude that any oddity about (21) must attach to some pragmatic infelicity accompanying its typical utterances.²⁹ Indeed, there is an *obvious* candidate for why it would be exceedingly odd to assert (21), given the form we assign it. Unless we are all very much mistaken about our ancestry, (21), interpreted literally, is *absurdly* false; in no ordinary circumstances would it make good conversational sense to assert it. The trouble with (21) is that we all know that no single person could bear the mother-of relation to all men. In contrast, in the case of an utterance of (6) in appropriate circumstances, we have no difficulty in seeing how each woman in a room could bear the seeing relation to the same man at the podium. This accounts for why the one is acceptable and the other not.

More generally, part of the usefulness of the construction “that *F*” is to help draw an auditor’s attention to his interlocutor’s belief that the object he is demonstrating falls under “*F*” in a way that renders the property it expresses salient for tracking the speaker’s demonstrative intentions. Our account neatly explains, on the basis of the semantics of “That *F* is *G*”, why this inference is reasonable, since it requires “*F*” to be true of the demonstrated object. Thus, our account handily explains the intuition that

²⁹Interesting issues are raised by cases of complex demonstratives that are intended to be interpreted as variables of cross-reference. Consider utterances of sentences such as “Every boy kissed some girl that that boy loved”. There is a reading of this sentence on which “that boy” is used demonstratively; for example, one may say this while pointing at a particular boy. But other utterances will naturally be interpreted as having the import of an utterance of “Every boy kissed some girl that he loved”, in which “he” functions as a variable of cross-reference. It is perhaps not surprising to find this dual use, since “he” and other pronouns of cross-reference also have a dual use as variables of cross-reference and as demonstrative pronouns. In the case of complex demonstratives, it is natural to suggest that the demonstrative itself is what functions as the variable of cross-reference (simple demonstratives clearly do, as in “Everyone loses something, and that is usually just the thing he most needs at the time”). Thus, “Every boy kissed some girl that that boy loved” where “that” functions as a variable of cross reference, is treated as equivalent to “[Every *x*: *x* is a boy] [some *y*: *y* is a girl such that [some *z*: *z* = *x* & *z* is a boy] (*z* loved *y*)] (*x* kissed *y*)”. The utility of using a complex demonstrative lies in the way the quantifier construction helps to draw attention to which quantifier binds the argument place occupied by the demonstrative by using the same nominal as that in the binding quantifier expression. This indicates that the values of the variable of cross-reference are intended to be restricted to objects which satisfy the predicate constructed from the nominal, making it salient as a candidate for binding by a quantifier in whose scope it falls which likewise restricts its variables to objects which satisfy the same predicate.

the nominal *pragmatically* helps to determine the demonstrated object. This utility would explain why someone asserts “That *F* is *G*” in preference to “That is an *F* and *G*” or simply “That is *G*”, when what is most important is that the object demonstrated is *G*. (Thus we satisfy desideratum (iii) of the previous section, as promised.)

However, this utility is often lost when the nominal contains a variable bound by a quantifier external to it. Quantifiers (definite descriptions excepted) normally are not in the business of singling out particular individuals, and so a relativized nominal will often fail to specify useful identifying information. Thus, against the standard practice, quantifying into complex demonstratives will often seem odd, as it does. But that is because using such constructions normally issues in odd performances and not because the result is semantically incoherent. The oddness of these performances is *predictable* from the account that we provide.

This pragmatic role the nominal plays may also explain why nominals formed with a relative clause in the past tense can seem not entirely natural, as in (25).

(25) ?Mary loves that man *who kissed Judy*.

This relative clause would often fail to provide useful information about the speaker’s demonstrative intentions. For one cannot survey the immediate environment to see what satisfies “man who kissed Judy” for help in identifying the object the speaker intends to be demonstrating, since no such event occurs at the time of utterance. In many circumstances, therefore, a use of (25) will seem unnatural. (Though if there is enough discourse context to make clear what the speaker has in mind, a use of (25) may seem unproblematic.) Contrast, in this connection, (25) with (26), utterances of which are typically unexceptional.

(26) Mary loves that man who is kissing Judy.

That our account can explain both how examples of apparently unproblematic quantification into complex demonstratives can be coherent, *and* why other cases seem odd, provides powerful additional support for it.

6. Other challenges

Richard (1993) has defended a thesis according to which complex demonstratives are what he calls “articulated” referring terms, which require that the nominal concatenated with the demonstrative semantically contribute to sentences in which they occur.³⁰ In discussing the viability of his treatment, he offers (27) as a potential difficulty,³¹ since, “sophisticated informants tend not to hear any reading of this on which it is true” (p. 220).

(27) Necessarily, if that dog with the blue collar exists, then it has a collar.

Though we deny that complex demonstratives are referring terms, like Richard we take their nominals to contribute semantically to sentences in which they occur. So, if (27) poses a difficulty for Richard's view, it may also pose a difficulty for our view that they are quantified noun phrases.

However, while there may appear to be a *prima facie* difficulty for us, our account has the resources to explain the intuitions Richard cites. For if complex demonstratives are restricted quantifier expressions, then the pronoun in the apodosis of (27) could be a variable bound by that restricted quantifier, which can take wide or narrow scope. The wide scope reading is represented in (28):

(28) [The x : $x =$ that and x is a dog with the blue collar] (necessarily if x exists, then x has a collar).

(28) is clearly false, so our view (unlike Richard's apparently) can provide a reading of (27) on which it is false. This is the first half of the defense of our position. To complete the defense, we need to show that there is a narrow scope reading, and then to explain the apparent dominance of the wide scope reading. So, first, we will motivate a narrow scope reading of (27), and then go on to explain why its dominant reading assigns "That dog with the blue collar" wide scope over "necessarily".

While the most natural reading of an unembedded use of (27) is one on which it is false, this is not so for all embedded uses. In (29), we naturally read the *embedded* clause as true.

(29) No one doubts that necessarily if that dog with the blue collar exists, then it has a collar.

This is generated by our trying to make sense of someone asserting (29), for clearly it would be surprising to assert it on the wide scope reading, but perfectly sensible on the narrow scope reading. This shows there are two readings of (27), both of which our account accommodates.

We also seem able to generate a narrow scope reading of unembedded sentences of the same form. Imagine that we are discussing a reclusive colleague reputed to have been working for years on a large manuscript whose eventual appearance will justify the apparently fallow period he

³⁰We put Richard in category (3) in the Larson and Segal taxonomy because he argues that the nominal of a complex demonstrative contributes to the truth conditions of the containing sentence, but continues to treat it as a referring term, whose referent he seems, on balance, to think must satisfy the nominal. Richard is on the verge of a view like ours, but for continuing to treat "that *F*" as a referring term. In treating it as a referring term, he is unable to give a clear account of how the nominal can contribute to the truth conditions, and would be unable to accommodate the quantifying-in data.

³¹Richard attributes the example to David Braun.

has fallen into since being granted tenure. One of us tells the other, expressing some skepticism about the eventual appearance the long-awaited masterpiece,

(30) Necessarily, if that big manuscript Tom has been working on for years exists, then it's a BIG manuscript!

Here we are not inclined to suppose that (30) is falsely uttered. Alternatively, imagine someone waking up after a night of excessive drinking, who, upon taking a cursory glance around, remarks with some circumspection,

(31) Necessarily, if these cockroaches covering my body exist, then my body is covered with loathsome insects.

(31) would be false on its wide scope reading. Yet if our subject is not hallucinating, but has unhappily fallen asleep in a cockroach den, what he has said is true. This is possible only if (31) has a narrow scope reading. If this is right, then the most natural reading for (27) is not forced by its semantics, and we must account for its naturalness on pragmatic grounds. (It is slightly easier to get the narrow scope reading when the consequent is not a trivial logical entailment of the predicate restriction in the antecedent (as in the case of (31)), which is what we should expect if the pragmatic account is correct.) These observations are bolstered by the fact that complex demonstratives in the antecedents of other necessitated conditionals clearly do take narrow scope, as in (32).

(32) Necessarily, if that dog is named "Spot", then some dog is named "Spot".

The remaining question is whether our account of the semantics of (27) also grounds a plausible pragmatic account of why it naturally receives a wide scope reading.

We assume, following Grice (1989), that engaging in a talk-exchange is a rational cooperative activity governed by the Cooperative Principle, or by general maxims underwritten by the Principle:

Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged. (p. 26)

Of particular interest for our purposes is the maxim to make one's contribution as informative as is required given the purpose of the talk exchange (Grice's maxim of Quantity) and the maxim to say only what one believes to be true or for which one has evidence (Grice's maxim of Quality). In interpreting others, maxims will often appear to come into conflict. One may have to choose between interpreting someone so as to make his contribution uninformative, or interpreting him as intending to convey something one believes to be false. To see him as in accord with the

Cooperative Principle, one must therefore see him either as failing to realize that what he has said is uninformative, or as having a false belief. *If* it is less plausible to suppose he fails to realize that he has said something uninformative than that he has a false belief, then on the assumption that he is obeying the Cooperative Principle, one will interpret him as saying something false rather than uninformative.

In general, when there is a conflict between seeing one's interlocutor, on the assumption that he is obeying the Cooperative Principle, as confused about the informativeness of something very obviously uninformative, *particularly* on semantic grounds any competent speaker would grasp, and having a false belief, there will be a strong pull to interpret the speaker as having a false belief.

We can exploit this to explain, on our account of the semantic role of complex demonstratives, why it is difficult to get a narrow scope reading of (27), given explicitly in (33).

(33) Necessarily, [the x : x is that and x is a dog with the blue collar] (if x exists, then x has a collar).

A literal utterance of (33) would typically be quite strange, since, on the assumption that on the occasion in question the speaker demonstrates a dog with the blue collar (as the speaker himself would suppose), the restricted quantifier guarantees both that the antecedent of the conditional and the consequent are true, and *this is something anyone competent in the use of these expressions would know implicitly*. Therefore, reading an utterance of (27) as (33) would commit one typically to seeing one's interlocutor as failing to obey the maxim of quantity, and *prima facie* as failing to obey the Cooperative Principle. If we are right, however, there is another reading of (27) on which the quantified noun phrase takes wide scope, namely, (28). (28) seems false, maybe even obviously false, but, as we have observed, when there is a choice between an interpretation which is, on semantic grounds, uninformative and one which is false but potentially informative, the latter is to be preferred. We therefore explain the reaction to an imagined utterance of (27) as false as a matter of choosing an interpretation which seems as more plausible that the speaker is confused or mistaken about the truth of the informative reading than that he fails to see that what he says is uninformative, which would convict him of semantic incompetence (better the frying pan than the fire). This also explains the point noted above that we find a narrow scope reading of such sentences easier when the consequent is not a trivial logical entailment of the predicate restriction in the antecedent, as with (31).

This explanation is further supported by the observation that we need, in any case, a pragmatic account for the natural readings of sentences like (34):

(34) Necessarily, if the dog with the blue collar exists, then it has a collar.

On its most natural reading, (34) is false. But since “the dog with the blue collar” is a quantifier, it has two scope readings in (34). Why is its wide scope reading more natural? Clearly, it is because the narrow scope reading is uninformative, and would therefore make an extremely odd contribution to a talk exchange on the assumption the speaker is competent in English. It is also odd to suppose that the speaker will not recognize the falsity of the wide scope reading, but this is more plausible than the alternative, and so we naturally give (34) the wide scope reading. The same phenomenon occurs with other restricted quantifier expressions. (35) is most naturally interpreted as entailing that married men are necessarily married, that is, (35) is most naturally read with “most married men” taking wide scope over “necessarily”.

(35) Necessarily, if most married men exist, then they are married.

Again, we have a ready explanation, namely, it is slightly more plausible to suppose someone fails to see the falsity of the wide scope reading than that he fails to see how uninformative its narrow scope reading is. The phenomenon identified by Richard, then, is not restricted to complex demonstratives, but also occurs with quantified noun phrases that clearly allow two readings. The pragmatic explanation of the dominance of one reading for these cases is just the explanation we have invoked for complex demonstratives.³²

We turn now to another kind of example that raises a challenge to our account.

David Braun (1994) argues against what he calls the rigidified descriptivist view, the view that “That *F* is *G*” is equivalent to “That is actually an *F* and is *G*”, because it cannot accommodate our intuitions about the use of complex demonstratives in complement clauses of attitude reports. An advantage of our view over the rigidified descriptivist view is that our position has the resources to explain intuitions about examples that the rigidified descriptivist view is unable to accommodate because that view treats sentences of the form “That *F* is *G*” as subject-predicate sentences with a singular referring term as subject. One example will serve to illustrate the difficulty Braun raises for the rigidified descriptivist view.

In the course of a dinner at a fine restaurant, Tom says to George, who is waiting on him,

(36) You are a good waiter.

Unbeknownst to Tom, George is wearing white sneakers. Another patron, Mary, who has overheard Tom assert (36), has noticed that George is wearing white sneakers, and, addressing her friends, says:

- (37) Tom believes that that man wearing white sneakers is a good waiter.

According to Braun, “Mary’s attribution could be perfectly true, in the context we are imagining” (1994, p. 206). Braun’s objection to the rigidified descriptivist view is that since it must represent (37) as (38), it must represent it as false.

- (38) Tom believes that that is actually a man wearing white sneakers and is a good waiter.

A similar objection *might* be leveled against our position, since it represents “that man wearing white sneakers” as “the x such that $x =$ that and x is a man wearing white sneakers”, and Tom clearly need not believe that the thing which is a man wearing white sneakers and is that is also a good waiter. However, our position clearly has the resources to accommodate these cases. By virtue of treating “that man wearing white sneakers” as a quantified noun phrase, we can invoke wide and narrow scope readings of (37). In the imagined context, to make good sense of what Mary has said, we would favor the wide scope reading:

- (39) [The x : $x =$ that and x is a man wearing white sneakers] (Tom believes x is a good waiter).

³²Consider the conditional (i):

- (i) If that stone exists, then it is not a stone.

It might be objected that our account cannot accommodate the reading of (i) under which the pronoun in the consequent is anaphoric on the demonstrative in the antecedent. In this case, it would be read, on our account, as (ii).

- (ii) If [the x : $x =$ that₁ and x is a stone]₁(x exists), then it₁ is not a stone:

where subscripts indicate cross-reference. The objection is that (i) could be true on our account, if the object demonstrated is not a stone, but it is in fact intuitively necessarily false. We have, however, a ready explanation for why an utterance of (i), even if “it” is anaphoric on “that”, would be judged necessarily false, which does not require giving up our account, and which draws on an independently supported theory of pragmatic implicatures, namely, Grice’s observation that typically people use material conditionals to implicate that they have non-truth-functional grounds for the truth of the conditional (Grice 1989, pp. 58ff). This minimally requires, however, that the antecedent and consequent of the conditional can be jointly true, which is not possible for (i), interpreted as in (ii).

A secondary objection attached to the same example might be that intuitively a speaker who utters (i) undercuts a reference assumption, while one who utters the materially equivalent, “if that is a stone, then it is not a stone”, undercuts a truth assumption. But this felt difference is already accommodated by the utility of the nominal, construed as a predicate of the object demonstrated, as a guide to the speaker’s demonstrative intentions. Given that utility, and the practice arising from it, someone using (i) would naturally be taken to be undercutting his own demonstrative intentions by employing “stone” as the nominal restriction on the demonstrative in the antecedent while the consequent denies that the demonstrated object is a stone.

This parallels what we would have to say to account for how Mary could say something true, as she very well might, by asserting (40) in the same context:

- (40) Tom believes that *the* man wearing white sneakers over there is a good waiter.

It is, of course, crucial that we can also generate narrow scope readings by suitably changing the context. Suppose that Tom had said to a companion, “That man wearing white sneakers is a good waiter”. Mary, not quite catching the modifier, and noticing that the waiter is wearing Nikes, turns to her companion and says, “Tom believes that that man wearing Nike sneakers is a good waiter”. Mary’s companion, whose hearing is somewhat more acute, responds, “No, he thinks that that man wearing *white* sneakers is a good waiter”. Here the narrow scope reading is at issue, since “that man wearing Nike sneakers” and “that man wearing white sneakers” pick out the same object.

These examples do not undermine our account, but provide further support for it by showing that complex demonstratives exhibit the same scope phenomenon as quantified noun phrases.³³

We turn finally to an interesting argument Higginbotham (1988) offers against treating expressions of the form “that *F*” as quantified noun phrases. He notes that (41) has two readings, (42) and (43).

- (41) John likes the book he read and so does Bill.
(42) John likes the book he read and Bill likes the book he read.
(43) John likes the book he read and Bill likes the book John read too.

³³ Jeffrey King has proposed as an objection to our account the following interesting example:

- (i) It is possible that that senator from California is a crook.

Intuitively, if someone utters this sentence pointing to someone who is not a senator from California, we think he has spoken falsely (this is additional evidence that the nominal does contribute to the truth conditions of sentences in which complex demonstratives appear!), and it is extremely difficult to get a narrow scope reading, which on our account is still semantically available. The first point to make is that, as we have seen, we can get narrow scope readings of complex demonstratives, which shows that the difficulty of getting the narrow scope reading must be pragmatic. This is confirmed by the fact that difficulty arises also for sentences such as (ii) which clearly contain a restricted quantifier in the position of “that senator from California” in (i).

- (ii) It is possible that the/some/every senator from California who is that man is a crook.

It is easy to understand why the narrow scope reading eludes us. Where demonstration of an object in the environment is involved, the point of the nominal will be to help the auditor to figure out what is being demonstrated, and so the auditor will take the speaker to be committed to the demonstrated object’s satisfying the nominal, which is to treat the noun phrase as having wide scope.

But, in contrast, according to Higginbotham, (44) has only the reading (45):

(44) John likes that book he read and so does Bill.

(45) John likes that book he read and Bill likes the book John read too.

We agree with Higginbotham that in (44) the book Bill likes must be the same one as the one that John likes, but we do not have the strong impression that the completion has to use “John”. Consider (46):

(46) John likes that book he read as does Bill.

It seems there is a reading of (46) on which we suppose it is implied that Bill read that book too. Furthermore, Higginbotham’s completion would make the sentence literally false, since while “John likes that book he read” can be true though John has read many books, “Bill likes the book John read too” will be false if John has read more than one book.

We can easily explain on our account why the book Bill likes must be the same as the one John likes and read, and so why there appears not to be the same sort of ambiguity as there is in the case of “the book he read”. Schematically, the two readings are, (47) and (48). Since there is only one demonstration in the original, both of (47) and (48) should be understood when instantiated to the complex demonstrative to employ a demonstrative referring to the same thing. So our account would represent the two readings as (49) and (50). Since the demonstrative requires it to be the same book, there is no ambiguity between the two readings about whether the book Bill likes was read by John or not.

(47) x likes $NP(x)$ and y likes $NP(y)$.

(48) x likes $NP(x)$ and y likes $NP(x)$.

(49) John likes (the y : $y = \text{that}_1$ and y is a book John read) and Bill likes (the z : $z = \text{that}_1$, and z is a book Bill read).

(50) John likes (the y : $y = \text{that}_1$ and y is a book John read) and Bill likes (the z : $z = \text{that}_1$ and z is a book John read).

Lastly, consider the case where John has been dating several women, and Bill has been dating one of the women John has been dating as well, though also other women. It makes sense to say (51). On Higginbotham’s account, (51) comes out as (52).

(51) John likes that woman (pointing) he is dating and so does Bill.

(52) John likes that woman (pointing) he is dating, and Bill likes the woman John is dating too.

But (51) is true, and its interpretation (52) is false. In addition, it seems that in this case there are two ways of hearing it. Knowing the background story, one way to hear it is as (53). If, on the other hand, we modify the story so that Bill has not been dating any of the women John has been dat-

ing, but likes one of them, and this is common knowledge, then the natural reading would be (54).

(53) John likes that woman (pointing) he is dating and so does Bill (like that woman he (Bill) is dating).

(54) John likes that woman (pointing) he is dating and so does Bill (like that woman he (John) is dating).

In the case of the definite description, Higginbotham thinks that (55) leads to (56) by VP deletion.

(55) x likes $NP(x)$ and y likes $NP(x/y)$.

(56) x likes $NP(x)$ and so does y .

We cannot see that our proposal calls for anything different.

7. Conclusion

One of the most puzzling aspects of demonstratives is their dual role as unstructured referring terms and their use in complex demonstratives. In this paper, we have shown how to reconcile these quite different roles without reducing one to the other, that is, without, on the one hand, treating all “demonstrative constructions” as referring terms that contribute only their referent to the truth conditions of sentences in which they occur, and without, on the other, assimilating all uses of demonstratives to quantifiers. The key to understanding demonstratives in complex demonstratives is to see the concatenation of a demonstrative with a nominal, as in “That F ”, as itself a form of restricted quantification, namely, as equivalent to “[The x : x is that and x is F]”. Once this identification is made, we can explain the puzzling phenomena surrounding complex demonstratives compatibly with treating demonstratives as context sensitive referring terms that make the same semantic contribution everywhere they occur. First, the identification allows us to explain why complex demonstratives exhibit many of the features of quantified noun phrases, and, in particular, why we can quantify into the nominal of a complex demonstrative. Second, compatibly with this, it explains our sense that complex demonstratives and simple demonstratives are in the same line of business by showing how non-vacuous uses of complex demonstratives involve a demonstration, just as in the case of uses of simple demonstratives, which supplies a subject for predication. Third, it explains, by appeal to a familiar pattern, how the nominal of a complex demonstrative can contribute to the truth conditions of a sentence in which it appears in a way that validates the semantically based inferences supported by non-vacuous uses of it. Fourth, it explains how complex demonstratives can exhibit scope phe-

nomena, though simple demonstratives do not. Fifth, it explains the mechanism by which the nominal in a complex demonstrative aids an auditor in figuring out what object a speaker using it intends to refer to. Sixth, it explains, in conjunction with standard principles governing conversational dynamics, why uses of some constructions involving complex demonstratives typically seem strange or infelicitous, and also why some available readings of sentences with complex demonstratives are difficult to obtain.

Once one sees that complex demonstratives function like quantified noun phrases whose restricting predicate contains a demonstrative, the semantic phenomena associated with complex demonstratives fall into an intelligible pattern, and we see that the contribution of the demonstrative itself can be captured completely by a reference clause.

Appendix: Reference clauses for demonstratives in an interpretive truth theory

If our discussion in §4 is correct, then so-called complex demonstratives need no special treatment in the reference axioms of a truth theory for English. In giving an account of the contribution of a complex demonstrative to the truth conditions of a use of a sentence containing it, we will simply appeal at the appropriate point to the reference clause for simple demonstratives. To develop our proposal for giving the reference clause for simple demonstratives we want to start with a simple proposal (derived from Davidson), which, while on the right track, fails for a number of technical reasons. We will consider a series of modifications, noting at each stage additional problems until we arrive at our final proposal.

We begin with a rule for the use of the demonstrative that uses a definite description, as illustrated in (57).³⁴

(57) $\text{Ref}_{[s,t]}(\text{"that"}) = \text{the object actually demonstrated by } s \text{ at } t.$

We include the adverb “actually” in the description to guard against difficulties that may arise in modal contexts. There is an important difficulty,

³⁴ While there are evidently differences in the usage in English of “this” and “that”, and “these” and “those”, the first of each pair being used for objects “nearer” the speaker, in some extended sense, than the second in each pair, when two or more objects may be demonstrated, we do not think this difference shows up in the truth conditions for sentences containing them. This difference in usage, therefore, is not reflected in the reference clause for “that”. Our treatment of plural demonstratives will be parallel to that for singular demonstratives. The simplest modification consists in replacing the singular definite description with the plural definite description. For example, the parallel initial proposal for “these” would be: $\text{Ref}_{[s,t]}(\text{"these"}) = \text{the objects actually demonstrated by } s \text{ at } t.$

however, with this proposal, which emerges when we consider how it would interact with other axioms to generate T-theorems. The proposal in (57) is intended to give a rule for determining the referent of a demonstrative on an occasion of use. Yet, using it to derive a T-theorem for a sentence of the form “That is *F*” yields (58):

- (58) “That is *F*” is true_[s, t] iff the object actually demonstrated by *s* at *t* is *F*.

Since there is no definite description in “That is *F*”, but there is on the right hand side of (58), which is being represented as meeting an analog of Tarski’s Convention T for natural languages, (58) fails to meet the adequacy condition on an interpretive truth theory for the language.³⁵ This is evident from the fact that (58) represents a use of “That is *F*” as false when a speaker fails to demonstrate an object.

To avoid this problem, we can try giving the description intermediate scope, as in (59). This yields the T-theorem (60) for “That is *F*”.

- (59) For all speakers *s*, times *t*, the object *x* demonstrated by *s* at *t* is such that Ref_[s, t](“that”) = *x*.
- (60) For all speakers *s*, times *t*, the object *x* demonstrated by *s* at *t* is such that “That is *F*” is true_[s, t] iff *x* is *F*.

Since a variable is used in place of the subject term on the right hand side of the embedded biconditional in (60), if a speaker demonstrates something at *t*, we can instantiate (60) to get a T-sentence whose right hand side will have a directly referring term in place of “that” in the sentence mentioned on its left, which is just what we want. (Variables are directly refer-

³⁵Tarski’s Convention T requires that a truth theory entail all instances of the schema,

(T) *s* is true in *L* iff *p*

where “*s*” is replaced by a structural description of an object language sentence and “*p*” by a translation of it into the metalanguage (Tarski 1935). Tarski called such sentences “T-sentences”. As Davidson first pointed out, if we knew that a sentence met Convention T, we would be able to replace “is true in *L* iff” with “means in *L* that” *salva veritate*. Thus, if a truth theory meets Convention T and we have a way of identifying every T-sentence, we are in a position to state the meaning of each sentence in the object language. In the case of a truth theory for a language with indexicals, demonstratives, and other context sensitive terms, and in which we treat the truth predicate as a relation between a sentence, speaker and time, as above, Tarski’s Convention T must be modified. What we require, then, is that the truth theory for *L* entail all instances of the schema (T*) (refer to note 11 for an explanation of “is true in *L* as if spoken by *s* at *t*”).

(T*) For all speakers *s*, times *t*, φ is true in *L* as if spoken by *s* at *t* iff *p*,

in which “*p*” is replaced by a sentence such that the result of replacing “is true in *L* as if spoken by *s* at *t* iff” with “means in *L* as if spoken by *s* at *t* that” yields a correct meaning claim, as in (M).

(M) For all speakers *s*, times *t*, φ means in *L* as if spoken by *s* at *t* that *p*.

(This would have to be modified slightly in the light of further relativization we urge on the basis of results later in this appendix.)

ring terms *par excellence*.) However, this commits us to there being some object demonstrated using “that” for each speaker and time, and that is clearly not the case. To solve this problem, we might appeal to the notion of a speaker’s potentially demonstrating an object at a time, as in (61).

- (61) For all speakers s , times t , the x which s potentially demonstrates at t is such that $\text{Ref}_{[s,t]}(\text{“that”}) = x$.

However, (61) is also problematic, since it is not clear how to determine which unique object a speaker potentially demonstrates at a time (if it even makes sense!). It is not clear that there is a way of spelling out the idea without being committed to there being many things potentially demonstrated by any speaker at any time rather than just one.

To avoid these problems, we must conditionalize on speakers’ demonstrating objects at times, as in (62).

- (62) For all speakers s , times t , objects x , if s demonstrates x at t , then $\text{Ref}_{[s,t]}(\text{“that”}) = x$.

The cost is that we cannot discharge “ $\text{Ref}_{[s,t]}(\text{“that”})$ ” in T-theorems until we can discharge the antecedent of (62).

A difficulty with (62) is that it will not yield the right results if a speaker performs more than one demonstrative act at the same time. A speaker may, for example, demonstrate something in using “that” in a sentence he asserts, and simultaneously demonstrate something with a gesture. In this case, there would be no unique object demonstrated by the speaker at the time, and so (62) would fail to assign a referent to “that” as used by the speaker at the time. We might try relativizing the demonstration to the use of “that”, but this is not adequate, since it is at least possible for a speaker to perform two speech acts at the same time in which there is a use of the demonstrative “that” at the same time in each speech act. (This could happen, if, for example, a speaker uses one sentence to perform ambiguously two speech acts, saying to his friend, “Bring me that”, pointing at an apple, while replying to someone else on the phone who has just asked, “Should I bring you that book?”.) To accommodate these possibilities, we must conditionalize on speech acts, and relativize the reference relation to speakers, times, and speech acts, as in (63).

- (63) For all speakers s , times t , speech acts u , and objects x , if s demonstrates x at t using “that” in u , then $\text{Ref}_{[s,t,u]}(\text{“that”}) = x$.

To say that “ s demonstrates x at t using ‘that’ in u ” is to say that “ s uses “that” in his performance of speech act u to demonstrate x ”. This means also that satisfaction clauses for demonstrative sentences must quantify over speech acts, as, for example, in (64) (we ignore tense in the following to keep the discussion simpler).

- (64) For all speakers s , times t , speech acts u of “That is thin”, $f \text{ sat}_{[s,t,u]}$ “That is thin” iff $\text{Ref}_{[s,t,u]}(\text{“that”})$ is thin.

This is needed to associate with the sentence for which satisfaction conditions are being given, and, indeed, the sentence as used in a particular speech act, the appropriate referent for the demonstrative it contains. Relativization of the satisfaction predicate is required as well because a speaker, as we have seen, can use one sentence at a time to perform two speech acts with different truth conditions. Thus, relativization simply to speaker, sentence, and time interval will be insufficient to individuate finely enough what is to receive satisfaction conditions. Reference clause (63) will assign a referent to “that” only when speakers use “that” in a speech act u to demonstrate an object. The truth theory, therefore, will issue in T-sentences for sentences containing demonstratives only when we can marshal information about the use of sentences in speech acts to assign a referent to the demonstrative as used by a speaker at a time in accordance with (63). This shows that for demonstrative sentences, truth conditions can be assigned only relative to a speaker’s use of the sentence in a speech act. There is, then, a sense in which the ultimate bearer of truth and falsity for such sentences must be seen as the speech act itself.

An important problem so far overlooked is how to handle the appearance of multiple demonstratives. Thus, consider (65) and (66):

(65) That is next to that.

(66) That is tall and that is thin.

In evaluating the reference clause for each demonstrative in (65) and (66), it looks as if we will be evaluating them with respect to the same time. But any use of (65) or (66) will involve two demonstrations using “that”, not one. So it looks as if the antecedent of our reference clause will never be satisfied, since it will require a unique demonstration by the speaker at the time in his utterance of the sentence using “that”.

One might suggest giving a truth theory not for English, but for a language that has indices for demonstratives to syntactically individuate them. One can then track different demonstrations by attaching them to differently indexed demonstratives.³⁶ Satisfaction clauses for (65) and (66) could then be given as in (67) and (68) respectively:

(67) For all functions f , speech acts u , $f \text{ sat}_{[s, t, u]}$ “That₁ is next to that₂” iff $\text{Ref}_{[s, t, u]}(\text{“that}_1\text{”})$ is next to $\text{Ref}_{[s, t, u]}(\text{“that}_2\text{”})$.

(68) For all functions f , $f \text{ sat}_{[s, t, u]}$ “That₁ is tall and that₂ is thin” iff $f \text{ sat}_{[s, t, u]}$ “That₁ is tall” and $f \text{ sat}_{[s, t, u]}$ “That₂ is thin”.

³⁶ Most formal treatments of multiple demonstratives have resorted to subscripting the demonstratives in a formal representation. See, e.g., Burge (1974), Kaplan (1989), Larson and Segal (1995) and Lewis (1975). Braun (1996) offers an interesting discussion of the difficulties that this approach raises in Kaplan’s framework for giving semantics for demonstratives.

Then the reference axiom for demonstrative expressions can be given as in (69):

- (69) For all speakers s , times t , numerals i , speech acts u , objects x , if s demonstrates x at t using $\ulcorner \text{that}_i \urcorner$ in u , then $\text{Ref}_{[s, t, u]}(\ulcorner \text{that}_i \urcorner) = x$.

Two problems face this suggestion. The first is that the approach does not interpret English directly. Anything less should be avoided if we can find a way to give the semantics of English sentences containing multiple demonstratives more directly, rather than by way of mapping them onto sentences in a regimented language which we do interpret directly. English speakers do not in fact exploit syntactic differences between different tokens of demonstratives in understanding sentences containing them. The second objection is that every instance of the antecedent of the embedded conditional in (69) will be always false for every English speaker, since English speakers do not utter sentences with numerically subscripted demonstratives. At the cost of some additional complexity, the proposal could be modified to avoid this last difficulty by associating indices with the order of occurrence of simple demonstratives in speech acts and conditionalizing on a use of a demonstrative in the right order in a speech act in assigning referents to subscripted demonstratives. Since there are independent reasons to be unhappy with this approach, we will pursue it no further.

An approach sometimes adopted is to relativize satisfaction and truth to sequences of demonstrata.³⁷ Let “ σ ” be a variable ranging over sequences of (potential) demonstrata, and “ σ_1 ” abbreviate “the first member of σ ”, “ σ_2 ” abbreviate “the second member of σ ”, and so on. Relativizing satisfaction to a sequence, we can give satisfaction conditions for “That is next to that” as in (70). (70) will yield a T-theorem of the form (71).

- (70) For all functions f , sequences σ , $f \text{ sat}_{[s, t, \sigma]}$ “That is next to that” iff σ_1 is next to σ_2 .

- (71) For all sequences σ , “That is next to that” is $\text{true}_{[s, t, \sigma]}$ iff σ_1 is next to σ_2 .

(71) is not quite right because it has descriptions (though disguised) on its right hand side. In any case, (71) has the undesirable feature of not telling us how to decide when a speaker has truly asserted a sentence with a demonstrative. To connect (70) and (71) with speakers’ speech acts, something like (72) is needed.

- (72) For all speakers s , times t , sequences σ , speech acts u , if u is produced by using “That is next to that” at t and the first x which s

³⁷For example, Taylor (1981) and Larson and Segal (1995). See also Lewis (1975) for a general discussion of the indices approach to handling context sensitivity.

demonstrates at t using “that” in u is σ_1 and the second x which s demonstrates using “that” in u is σ_2 , then “That is next to that” is $\text{true}_{[s, t, u]}$ iff “That is next to that” is $\text{true}_{[s, t, \sigma]}$.

Since we must introduce in any case a truth predicate with places only for speaker, time, and speech act to relate our truth predicate relativized to speakers’ use of language, it is well worth asking what work the middleman is doing.

Our preferred approach is to track different uses of demonstratives in a sentence with multiple demonstratives by using information available to speakers when they actually interpret such sentences, namely, that the demonstratives are uttered in sequence.³⁸ Intuitively, what we want is to relativize the employment of the reference clauses for each demonstrative that occurs in a sentence to a different time. But the times must be related appropriately to the time interval during which the sentence is uttered, that is, in evaluating a sentence relative to a speaker and time of utterance t , with more than one demonstrative expression, we wish to evaluate the demonstratives relative to different times within the interval during which the sentence is uttered and in the order in which they are uttered. For this purpose, we define a predicate “ Δ ” as follows:

Def. $\Delta(t, t_1, t_2, \dots, t_n)$ iff $t_1 < t_2 < \dots < t_n$ and t_1, t_2, \dots, t_n occur in t .

One option is simply to add temporal variables bound by universal quantifiers to accommodate each distinct appearance of “that” in an argument place in a primitive predicate, and for each combinatorial element in recursion clauses, and add the predicate “ Δ ” at the end to relate them. However, since our aim is interpretability (see note 35), we will do better to let the predicate restrict the quantifiers rather than add it to the material on the right side of the contained biconditional. This leads to satisfaction clauses as in (73) and (74) (the theory of course would generalize over formulas containing demonstratives).

(73) For all speakers s , functions f , speech acts u of “That is next to that”, times t, t_1, t_2 such that $\Delta(t, t_1, t_2), f \text{ sat}_{[s, t, u]}$ “That is next to that” iff $\text{Ref}_{[s, t_1, u]}$ (“that”) is next to $\text{Ref}_{[s, t_2, u]}$ (“that”).

(74) For all speakers s , functions f , speech acts u of “That is all and that is thin”, times t, t_1, t_2 , such that $\Delta(t, t_1, t_2), f \text{ sat}_{[s, t, u]}$ “That is tall and that is thin” iff $f \text{ sat}_{[s, t_1, u]}$ “That is tall” and $f \text{ sat}_{[s, t_2, u]}$ “that is thin”.

This generalizes to predicates with an arbitrary finite number of places, and to other recursive sentential connectives. By evaluating each occurrence of “that” in a sentence at a different time, we avoid the difficulties reviewed above, without having to modify our reference clause for simple demonstratives. This approach easily extends to complex demonstratives, given our treatment of them in §4.³⁹

We end with a brief discussion of how the treatment given above for “that” may be extended to more specialized demonstratives, and demonstrative pronouns, such as “here”, “this”, “there”, and “he”, “she”, “her”, “him”, “it”, “you”, etc. Let us take “he” as an example. The same issues arise for the other terms. If “he” is a singular term receiving a reference clause in a truth theory, then we must decide whether gender is to play a

³⁸ Another suggestion that makes use of the general idea of an ordering of uses of demonstratives in an utterance of a sentence would consider whether a function satisfies a formula as used by a speaker at a time by asking whether some related functions satisfy a formula obtained by replacing a demonstrative in it with a variable which does not already appear in the original formula. The trick is to say a function satisfies the formula only if minimal variants of it, which assign the object demonstrated by the speaker using the demonstrative to the introduced variable, satisfy the formula. To do this, we can define two satisfaction relations, one that applies to formulas without demonstratives, and one that applies to formulas with demonstratives. The one applied to formulas with demonstratives is defined recursively in terms of itself and the other relation. First it goes through and replaces all demonstratives with variables and constrains at each stage the functions we are looking to have satisfy it assign to the variables the referents of the demonstratives. Then our regular satisfaction relation is invoked. The clauses could be formulated as follows:

For all speakers s , times t , sentences φ , φ is true_[s, t] φ iff
 if φ contains a demonstrative, then
 for all speech acts u , if u is an utterance of φ by s at t ,
 then for all functions $f, f \text{ sat}_{[s, t, u, 1]}^D \varphi$;
 if φ does not contain a demonstrative, then for all functions $f, f \text{ sat}_{[s, t]} \varphi$.
 Now we define “ $\text{sat}_{[s, t, u, n]}^D$ ” as follows.
 For all speakers s , times t , functions f , speech acts u , numbers n , formulas $\varphi, f, \text{sat}_{[s, t, u, n]}^D \varphi$ iff
 if “that” is the first demonstrative appearing in φ ,
 then all f' differing from f at most in that $f'(\text{fresh}(\varphi)) \neq f(\text{fresh}(\varphi))$,
 if $f'(\text{fresh}(\varphi)) = \text{Ref}_{[s, t, u, n]}(\text{“that”})$
 then $f' \text{ sat}_{[s, t, u, n+1]}^D \text{SUB1}(\varphi, \text{“that”}, \text{fresh}(\varphi))$;
 ...;
 if no demonstrative appears in φ ,
 then $f \text{ sat}_{[s, t]} \varphi$.

We replace “...” with additional clauses for the other demonstratives in the language. Here “fresh (...)” is a function that yields the first variable not appearing in “...” in some predetermined ordering of variables. For example, if we use subscripted variables, “ x_1 ”, “ x_2 ”, ... , fresh (“ x_8 is x_1 ”) = “ x_9 ”. “SUB1 (x, y, z)” yields the result of substituting z for the first y in x . For example, SUB1 (“That is next to that”, “that”, fresh (“That is next to that”)) = “ x_1 , is next to that”. “ $\text{Ref}_{[s, t, u, n]}(\text{“that”})$ ” is read as “the referent of the n^{th} use of ‘that’ in u by s at t ”. The reference clause goes as follows.

For all speakers s , times t , speech acts u , numbers n , objects x , if s demonstrates x at t with the n^{th} use of “that” in u , then $\text{Ref}_{[s, t, u, n]}(\text{“that”}) = x$.

We owe this suggestion to Greg Ray. We prefer the approach we outline in the text because it requires a simpler modification of the truth theory than the alternative just presented, and fits together nicely with a truth-theoretic semantics for tense that can exploit the apparatus introduced here. See Lepore and Ludwig (2000).

role in determining the referent of a use of “he”. Two options are (75) and (76).

(75) For all speakers s , times t , objects x , speech acts u , if x is demonstrated by s at t using “he” in u and x is male, then $\text{Ref}_{[s, t, u]} = x$.⁴⁰

(76) For all speakers s , times t , objects x , speech acts u , if x is demonstrated by s at t using “he” in u , then $\text{Ref}_{[s, t, u]} = x$.

In (75), “he” will not be assigned a referent unless what is demonstrated is male, while in (76), a referent will be assigned whether the object demonstrated is male or not. In (76), gender plays no role in fixing the referent, but is rather something conventionally implied by the use of the male pronoun, which, strictly speaking, does not contribute to the truth conditions of sentences containing it. On neither proposal would it turn out that a non-vacuous use of “He is handsome” implies “Something is male”, though, on proposal (75), one *could* infer from “He is handsome” *having been asserted truly or falsely* that something is male. To secure the stronger requirement that what is asserted in using truthfully “He is handsome” entails that something is male, one must give up the view that “he” functions simply as a singular referring term. Rather, we would have to treat “he” as a restricted quantifier phrase, a fusion, as it were, of “that” with “male” (cf. “someone”). But since no separate lexical item plays the role of the referring term in “he”, we would have to give satisfaction conditions for “he” in context. We want to retain the idea that no sentence with “he” in a position where it could only be used as a demonstrative pronoun is true or false except as used. We did this in the case of “that” by assigning a referent to it only as it is used at a time to demonstrate something. We cannot do that for “he” because we cannot give a separate reference axiom for “he”, if we want to secure that a necessary condition for the truth of a sentence in which it occurs is that the object demonstrated is male. So we must conditionalize satisfaction clauses of sentences with demonstrative uses of “he”. We illustrate this with “He is handsome”, or, rather, its regimented cousin, “[He x](x is handsome)”, in (77).

(77) For all speakers s , times t , objects y , speech acts u of “(He x) (x is handsome)”, if s demonstrates y at t using “he” in u , then for all functions $f, f \text{ sat}_{[s, t, u]} “(He x) (x \text{ is handsome})”$ iff some function f'

³⁹An alternative approach is to give truth theories not for sentences with a truth predicate relativized to speakers, times, and speech acts, but to conditionalize on speech acts performed using sentences by speakers at times and employ a one place truth predicate of utterances. The same work can be done in this alternative framework. See (Weinstein 1974) for a sketch of the technique for a simple language.

⁴⁰Higginbotham (1988) opts for a proposal for such terms that is effectively equivalent to (75). Kaplan, in “Dthat” (1978, n. 25), assimilates “he” to “dthat(male)”; if we are not mistaken, (75) captures the rule Kaplan would associate with this.

that differs from f at most in that $f'("x") = y$ and $f'("x")$ is male
 $\text{sat}_{[s, t, u]}$ "x is handsome".

Which approach is correct depends on whether non-vacuous uses of sentences like "He is handsome", and "She is beautiful" imply respectively "Something is male" and "Something is female". (If non-vacuous utterances of "Necessarily, if he is handsome, then he is male" are true (where the uses of "he" refer to the same individual), then "is male" must contribute to the truth conditions of "he is handsome". This seems false to us, which would recommend (75) or (76).) We wish not to adjudicate between these approaches here, but it is worth noting what the consequences are of different judgments about the role of gender inflection; similarly for other specialized demonstrative terms.⁴¹

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⁴¹ Earlier drafts of this paper were presented at the University of Mexico (at a conference honoring Donald Davidson), the Oxford Philosophical Society, University College (London), Bristol University, Florida State University, the Florida Philosophical Association meetings, the Pacific Division American Philosophical Association meetings, and the Society for Exact Philosophy meetings. We would like to thank the following people for helpful comments on various drafts of this paper: Kent Bach, Emma Borg, David Braun, Mark Brown, Annabel Cormack, Donald Davidson, Josh Dever, Michael Devitt, Maite Ezcurdia, Greg Fitch, Jerry Fodor, Graeme Forbes, Lou Goble, Jim Higginbotham, Kent Johnson, Jeffrey King, John McDowell, Stephen Neale, Peter Pagin, Paul Pietroski, Greg Ray, Mark Richard, and Rob Stainton.

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