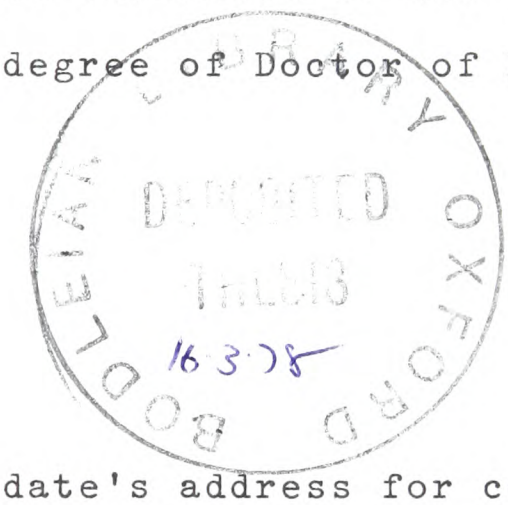
A PHILOSOPHICAL GRAMMAR

Stephen Read

A dissertation submitted to the University of Oxford

for the degree of Doctor of Philosophy, 1977.



Candidate's address for communication:

Department of Logic and Metaphysics,

University of St. Andrews,

St. Andrews, Fife, Scotland.

Abstract

The aim of these chapters is to isolate, and then to characterise further, a way of using nounphrases which has been called a uniquely referring or purely referential use. I will distinguish it from another sort of use or occurrence which is truly predicative of those and other expressions in a sentence.

Central to this distinction is a negation-argument of Frege's. Frege used it to distinguish quantified expressions from true names. I shall use it both to distinguish certain uses of expressions as names from their other uses as quantified phrases, and to find a logical form for quantified expressions. The latter application shows how Frege's claim that the quantifier in such a nounphrase belongs with the predicate means that quantified phrases are used predicatively. The argument is closely related to a point attributed to Geach, that predicates may be negated, while names cannot. I will suggest that the essential difference between quantified phrases and referring phrases is that the former are predicative, and may be negated. Then the latter, the referring uses, are not predicative. Indeed, they are in a sense semantically inert, or vacuous. They serve simply to provide an object for the truth-condition. It is this vacuity which renders them not subject to negation.

The observation made by Frege divides all nounphrases, of the form $\ulcorner \dagger A \urcorner$, where '$\dagger$' is any applicative (Johnson's

term) such as 'a', 'the', 'some', 'all' and so on, and A is any (simple or complex) general term, into quantified phrases and referring phrases, as follows: ⌜$_{\tau}$ A⌝ occurs referringly in the sentence ⌜($_{\tau}$ A) ϕs⌝ if and only if the contradictory (negation) of the latter is ⌜($_{\dagger}$ A) does not ϕ⌝, that is, if and only if ⌜($_{\dagger}$A) ϕ s⌝ is true if and only if ⌜($_{+}$A) does not ϕ⌝ is false. For example, 'the King of France' occurs referringly in 'The King of France was executed' if and only if the contradictory is (that is, it can be denied by saying) 'The King of France was not executed'. Since the contradictory of 'Some kings are executed' is not 'Some kings are not executed', 'some kings' does not occur referringly in either sentence.

Frege used the observation to show that quantified phrases are not semantically unified in the way that individual names (Eigennamen) are. The applicative "logically belongs with the predicate"; the phrases do not constitute the "logical subject". We can turn the point on its head to show that certain expressions (for example, certain uses of the definite article, contra Russell) are not quantified expressions, and do truly pick out and are related directly (refer) to objects (that is, they sometimes are the logical subject). There is a distinction between referring expressions and quantified phrases which is obscured not only by such a programme as Montague's, which treats all proper names along with quantified phrases as second-level predicates, and Partee's transformationalisation of it, but also by

any use of first-order logic, such as Quine's, to regiment natural language in which all occurrences of definite and indefinite nounphrases are represented (replaced?) by quantifiers, predicates, and variables.

Secondly, I shall take Donnellan's well-known distinction between referential and attributive uses of definite descriptions, and show that, despite the strong pragmatic features of reference, the distinction between two ways of using an expression is nonetheless semantic. Indeed, it is one of those semantic notions to be given a structural and syntactic explanation. It is a distinction between types of occurrence of definite descriptions in (type-)sentences, of the same sort as we might make between nominal and gerundive occurrences of, say, 'flying planes'. I do not take it as part of my brief to set out a justification of the distinction. However, I would suggest that the uses made of it here provide a verification of it by its application to different cases, and the connection of its poles with other means of classification. Moreover, we will find that it can be naturally extended to cover indefinite nounphrases of the form 'an F'.

The referential use corresponds to a natural and intuitive notion of referring, of a uniquely referring use. Given that a phrase in a sentence can be used in such different ways - referentially and attributively - there is a need to distinguish its true, deep or logical form from its superficial, surface or grammatical form.

It is therefore incumbent on me to find an underlying form for attributively used phrases, a structural complexity which reveals their predicative nature. It must be differentiated from a form underlying referentially used phrases which similarly reveals what I shall call the semantic vacuity of reference. The former task is achieved by the second use of Frege's argument; the latter by assimilating referential uses of nounphrases to appositive relative clauses, whose additional remarks are inessential to the truth of the whole sentence.

My attention will focus mainly, therefore, on reference; problems and questions raised will usually concern this notion, and other issues treated will arise in order to pinpoint a contrast with referring uses of language. Nonetheless, as the chapters progress we will see emerge a wider view of language, an overall conception of the philosopher's concern with language. The term 'philosophical grammar' may justly be applied to the analysis of those concepts which are needed by the philosopher to answer those numerous questions which are closely involved with grammar. This kind of grammar will provide an explanation of these notions in terms of, on the one hand, the representation of sentences in terms of a normally implicit logical form, and on the other, the use of this logical form to frame adequate truth-criteria for the sentences represented.

The first chapter starts with an examination of Donnellan's distinction, showing that it can be used to

account for the phenomena of referential opacity. One traditional account, in terms of the scope of an existential quantifier, is shown to be inadequate. The facts of opacity are seen to consist in an ambiguity between reference to an object, which is not a description of it, and the formation of a general proposition which speaks of something only in so far as it satisfies a description. Donnellan's description of his distinction as pragmatic is found to be at fault. The semantic account argued for requires a syntactic base, which in turn requires a discussion in the second chapter of the connection between syntax and semantics.

The second chapter presents the view that logical form is a structural description of a sentence from which its truth-conditions can be found. Regimentation to such a form necessitates an understanding of the complexities of syntax, and aid in this is sought in transformational generative grammar. Reason is given to identify logical form with the deep structure of some such grammar. The chapter also draws considerably on Davidson's idea of using a Tarski-style truth theory for the semantics of natural language. It criticises Davidson's particular suggestion for a logical form for action sentences.

The third chapter looks generally at quantified phrases to find a logical form for them. It uses the argument drawn from Frege sketched above, and so not surprisingly concludes that quantifiers are second-level predicates. It goes on to elaborate this idea in the

context of transformational generative grammar.

The fourth chapter draws together matters from the first three, to discern the difference in logical form, that is, deep structure, between referential and attributive occurrences of expressions. The difference is captured by relating attributively used expressions to the structure of restrictive relative clauses, referentially used ones to that of appositive or non-restrictive relative clauses. The conjunctive structure of appositive clauses captures both the semantic vacuity of, and the speaker's commitment present in, referentially used expressions. The quantificational structure of restrictive clauses suggests how intensional truth-definitions can be phrased to account for opacity.

The first part of the present work is concerned primarily with the syntactic structures involved in reference. The second part turns away from this to an account of reference in terms of its truth-conditions.

The fifth chapter puts forward an account of identity statements in terms of reference mainly in order to examine the consequences of doing so for the theory of reference. The referential/attributive distinction is grounded on paradigmatic uses of subject and predicate respectively; this paradigm lends the description "subject-predicate statement". The concepts used here can apply outside the paradigm to characterise identity, generic and identification statements. Reference is founded on identification, predication on truth and meaning.

The connection of reference with identifying leads in the sixth chapter to an examination of the pragmatics of reference. Can we link referring with intending to refer? An intention to refer to m is neither necessary nor sufficient to refer to m. But the way in which one's intentions are (logically) dependent on one's beliefs about how one may act, that is, what it is possible for one to do, gives the clue to connecting one's referring with a belief in one's success. Indeed, certain beliefs about the audience's capacity for uptake are necessary. While they are not sufficient, however, an intention to refer to an object using a certain expression is, provided the object exists and largely because of the strong constraints to which we find intending is subject, sufficient for referring to it.

The seventh chapter looks briefly at the question of existence, given that it is a necessary condition of success in referring; once again, the context of discussion is the referential/attributive distinction. We find that 'exists' is a predicate; what was shown by those who claimed that it was not was that its (grammatical) subject could not be being used referentially. Its apparent subject is therefore not its logical subject, but itself used predicatively. The general tenor of the chapter is that the philosopher is concerned with what sorts of things exist, not to show that they do not. Given that something does exist, regardless of what sort of thing it is, one can refer to it. If it does not, then expressions appearing to refer to it may be being used attributively;

but they may, nonetheless, be used referringly.

The view of semantics arising from the fifth chapter considered it to require, on the one hand, a concept of reference as the provision of an object, under no particular description, for the framing of the truth-condition, and on the other, a concept of predication whereby the object so provided is described. The truth-condition then settles, relative to the world, whether it is truly described. The eighth chapter attempts to delineate a notion of meaning or content which fits this conception. It is needed for any expression which has a predicative use, and is founded on the equivalence relation given by substitution salva veritate in opaque contexts. The opacity of intensional predicates requires a content for all descriptions to which they are attached; this content itself arises from the predicate occurrences of the descriptions' parts.

This conception of meaning makes no reference to any particular epistemic notions. Although epistemic terms are central in producing opaque contexts, the central notion of the semantics is truth (true predication), and not any such epistemic concept as verification. The final chapter considers Dummett's arguments that the theory of meaning cannot be extended to its necessary function as a theory of understanding unless it already contains overt epistemic notions and is founded on a requirement more human than absolute truth. Dummett draws support from two arguments of Frege's for

distinguishing sense from reference. It is found that both Frege and Dummett model knowledge on acquaintance - they consider knowledge to be fundamentally perceptual. This is the driving force behind Dummett's flight into idealism. The conclusion is that Dummett requires too much of semantics in looking for a detailed specification of the meanings of all the words of the language. A view of semantics as explaining how language works, in particular how the truth-conditions of sentences depend on the meanings of their constituents, is contrasted with Dummett's demands. The present work attempts to provide such an account, centring on an understanding of the concepts of reference and predication.

A Philosophical Grammar

by Stephen Read

A Philosophical Grammar

Contents

Part I

1. Opacity. Introduction - An Essential Occurrence - Presupposition - Opacity - A Semantic Distinction - The Scope Analysis - A Three-Fold Ambiguity - Conclusion.
2. Logical Form. Introduction - Ad Hoccery and Logical Consequence - Davidson's Account of Action Sentences - Syntax and Semantics - The Semantics - The Syntax - The Dependency of Semantics on the Transformations - Conclusion.
3. Quantifiers. Introduction - An Application of the Frege Argument - The Complex NP Structure - The Complex NP Constraint - The Quantifier as Second-Level Predicate - Syntactic Indexing - Conclusion.
4. The Structural Description. Indefinite Descriptions - The Attributive/Appositive Distinction - Appositive Clauses - An Application - The Definite/Indefinite Distinction - The Contrast in Deep Structure - Intensionality - Conclusion.

Part II

5. Identity and Reference. Introduction - Geach's Suggestion - The Search for a Paradigm - The Theoretical Scheme - Other Possibilities - Reference and Denotation -

Identifying - Misreferring - A Rival View - Identity - Conclusion - Postscript.

6. The Pragmatics of Reference. Introduction - Intentions and Beliefs - Audience Uptake - An Identifying Description - The Directedness of Intention - Misreference and the Possibility of Correction - Conclusion.

7. What Sort of Predicate is Existence? Introduction - Internal and External Questions of Existence - A Predicative Subject for Existence - Reference and External Questions.

8. Meaning and Predication. Predication and Denotation - Four Conceptions of Meaning - Meaning as Intensional, but not Epistemic - The Meaning of Intensional Predicates - Meaning as Truth-Preservation in Opaque Contexts - Meaning a Predicative Notion - Conclusion.

9. Sense and Content. Dummett's Flight from Realism - Epistemic Terms in Semantics - Frege's Distinction of Sense from Reference: The First Argument - The Second Argument - Semantics and Understanding.

Part I

Chapter One: Referential Opacity

1. Introduction

In 1966 Donnellan discussed an ambiguity in descriptive phrases;[1] such a phrase may be used to denote whomever or whatever has the property comprising the description, or it may be used to pick out or refer to an individual in such a way that the possession by that individual of that property is not essential to successful reference.

In order to make use of Donnellan's distinction here it is necessary firstly to characterise the attributive use of definite descriptions. For I wish to use the distinction to explicate the notion of reference, and Donnellan's account of the referential use already employs such expressions as 'use to pick out' and 'refer to what the speaker wishes to talk about'.

"They're closing down all services north of Watford. It's true - I heard it from the clerk at the ticket office." Given our usual social anonymity, a natural context for this remark would be the speaker's being disposed to believe the clerk, at least on matters concerned with the railway, whoever the clerk is - he might

---

1 K. Donnellan, "Reference and Definite Descriptions", Philosophical Review 75 (1966), 281-304.

know nothing else about the man other than his being the clerk at the ticket office. From such an assumption we may isolate a number of points. The first is that the person may be indicated solely as whoever satisfies some description, and no other manner of identification is involved. Secondly, the description may encapsulate the reason for, in this case, the belief in the clerk's claim - the reason being that he is a railway employee - and so the description is, in some sense, essential to the statement. So that thirdly, an important element of that statement would be lost if it were rephrased to mention him by some other description not encapsulating that reason. Those descriptions which have the first of these elements were, Donnellan said, to be called "attributive"; otherwise "referential". So let us look more closely at the second and third of these points.

2. An Essential Occurrence

There are two senses in which the description 'the F' in 'G(the F)' - for example, 'I trust the clerk at the ticket office' - may be said to occur essentially. i/ We are simply talking about who- or whatever the expression denotes, that is, the truth-condition is roughly: something both is F (and perhaps uniquely F) and G of it. The truth-condition is consistent with our only means of identifying the F being that it is the F (though of course we could have others). We are using the description predicatively or attributively, to speak of whatever is F, and our assertion is that G holds of whatever is F.

ii/ Our reason for saying that whatever is F is G is that it is the F; that is, while we may still have other means of identification of the F, it is essential to the truth of the sentence that whatever is G is F. Implicit is some connection between being F and being G. The predicate 'G' is applied to the object only in so far as it is F. In this case we must be unwilling to substitute for the description 'F' many other description, even though that other description also applies (uniquely) to the F. For such substitution might remove a necessary condition of the truth of the assertion, and cut out the essential connection between the two predicates (albeit one is disguised) in it.

We must be careful here, however, to distinguish whose reasons are at stake. Suppose I report that our earlier speaker, Bill, trusts the ticket clerk. It is Bill who trusts him, whoever he may be, not I. So that we may say that his being the ticket clerk is essential to, and a necessary condition of, Bill's trust. If I proceed to infer that Bill hence trusts the biggest liar in the neighbourhood, I can no longer suppose that Bill trusts whoever is such a liar - the description no longer plays its essential role in the truth-condition.

The latter sense of 'essential', issuing in a reluctance to substitute under identity - reflected in the possibility for change in truth-value - is what is characterised by Quine as an occurrence of a description in an opaque context. The former sense of 'essential' is

Donnellan's notion of an attributive use. This attributive use is contrasted by Donnellan with another sort of use in which the description is not essential - in which misdescription is possible. In general any other name or description calling attention to the object will do. Seen in this way, the two senses of 'essential' are linked in this: that there cannot be the essential connection between the description and the predicate in ii/ unless the description is being used attributively, since only in an attributive occurrence does the content of 'the F' figure explicitly in the truth-condition. So it is a necessary condition of non-substitutivity that the definite description be used attributively, while it is not a sufficient condition.

The further necessary condition, which jointly with the first is sufficient, is that the predicate be of a certain restricted sort. For a predicate containing a mental conduct verb, describing, for example, one's belief of the railway clerk, is one to which reasons for so describing an object are appropriate. And conversely, substitutivity is a necessary condition of a referential use, for the object itself, regardless of how denoted, is an element of the truth-condition.

It follows immediately that in an attributive use there is no possibility of misdescription. A sentence with a description so used cannot express the statement that something which, it happens, is not F, is G. Its truth requires that G hold of whatever fits the description. If nothing does, either no statement has been made, or

the statement made is false. So what can we learn from this about the other use, the referential?

Another name or phrase will do equally well, and can be substituted, salva veritate, for the description, so used. Moreover, the object I wish to pick out or refer to can be misdescribed, if for other (contextual) reasons, I succeed in identifying it for the audience with that faulty description. So that here the description is inessential, and can constitute in no way the reason for the application of the predicate. Indeed, even if there were something else, other than my intended referent, that fitted the description while it did not, I would not have referred to that. Reference retains an autonomy from the forms of description used to refer. We will nonetheless find that there are specific syntactic features which fit expressions for such a referential usage, and constitute its necessary conditions.

This autonomy or semantic vacuity of reference means that any other device for doing the same job of identifying what I am talking about can be used. There is an amended statement in which a different name or description is substituted for the former. Given that the description involved in the reference is inessential, 'amended statement' must here mean 'same statement expressed by an amended (different) sentence'. Quine firstly delineated the notion of a substitutable (what he calls "purely referential") occurrence of a singular term, and then characterised as opaque those sentential contexts which

are such that, when sentences are inserted into those contexts, positions in the sentence which previously allowed substitution under identity salva veritate no longer do so. However, he then recognised that such positions, or terms in those positions, could be read as either substitutable or non-substitutable. This suggests that it is not the context or position, or at least not it alone, which induces the non-substitutivity, but the sort of use made of the term in that position.

Moreover, not all positions or terms not so substitutable occur in embedded sentences, and so the non-substitutivity cannot be explained solely in terms of opaque sentential contexts. Bill both does and does not trust the biggest liar; the ambiguity derives from the different use of the description, giving it a different role in the truth-condition. In one use it is (doubly) essential - and the statement is false; in the other it allows of substitution salva veritate - and so its truth follows from that of 'Bill trusts the ticket clerk'.

3. Presupposition

We saw that, in reporting an attributive use, there just is no way to correct the description; there is no pivot about which referentially to correct the reported speaker's expression. The statement is about whatever fits the description, and indeed it requires that something does fit it. But if a description is used referentially, there is simply a presupposition or presumption

that that thing to which the speaker is referring (which he is attempting to identify by that description) does fit the description.

Donnellan in fact finds problems in specifying the statement or finding an acceptable form of words to express the amended statement in reporting the statement made by someone whose means of identification one cannot endorse - one cannot use oneself. For whatever phrase is used in this way - referentially - is taken to carry the speaker's endorsement. There is a "presumption" that the speaker believes the description to be useful in picking out the thing to be talked about. Reference can, however, still be made, regardless of uptake's being affected. The statement can still be true even when the speaker lacks the belief that the description fits the intended referent. The presumption that the referent fits the description does lead to a reluctance to use a phrase referentially which one believes to be inappropriate. But that is all. Reference allows of misreference.

If the referent does not fit the description, a statement has still been made, and indeed just the same statement. This presupposition is therefore pragmatic, being the recognition that usually the descriptive phrase picks out the object by connoting some property of it. Moreover, the presupposition is specific, in being concerned specifically with the intended referent, and not with whatever fits the description. Such a pragmatic presupposition is one of belief.

The Strawsonian semantic presupposition of the

sentence with the description used referentially is simply that there is a referent. It is (as Donnellan noted) not a matter of satisfying the description. But if reference can succeed by (or despite) misdescription, the cases of total failure of reference must be extreme. We have then two sorts of presupposition in the case of a referential use.

Suppose the descriptive phrase 'the F' occurs in the sentence:

1/ The F is G.

Then the existential requirement of an attributive use may be represented as '$\exists x$(x is F)'. But the presuppositions of the referential use are: firstly the pragmatic one - 'Fa', that that thing, here picked out by the (theoretical) name 'a', is F; it is presumed specifically that that object is F. Secondly that something is referred to by the description: this can be given by requiring that the term 'a', which is used in the logical forms, does refer to the object correctly. (The language of representation, in which the logical forms are cast, is an ideal language.) If nothing at all is referred to, there can be no such term, no truth-condition will be forthcoming, and so the sentence can be given no truth-value.

Donnellan remarked that this specificity in the pragmatic presupposition of a referential use, that some particular person or thing is F, is not captured by the existential quantifier (op. cit., 299). Here, he said, lies a great difference between Russell and Strawson in

their analyses of definite descriptions. For Russell concerned himself exclusively with the attributive use of such phrases, which must be treated as quantified phrases; so used, 1/ states only that whatever is (the) F is G, that is, that there is some one thing which is F and (it is) G. Strawson, however, recognised a different way of using such phrases; something is picked out specifically, to which the phrase used in the identification relates only incidentally (that is, it may not really fit the object), and it is said of that thing that it is G. What force the description does have is simply contextual and pragmatic, and carries the endorsement of the speaker.

We see then that in an attributive use there is an element of generality which is absent from the referential use. In the one case the sentence is completely general, and the description should be treated as a quantified phrase; in the other the description is used to refer to a specific object, and the phrase is demonstrative. This demonstrative aspect of reference is most clearly seen in what I earlier called the vacuity of reference: the description in a referring phrase has simply a pragmatic or contextual value in identifying the object of reference, and that object can be misdescribed. In the contrasting use of the description as a quantified phrase the description is essential, allowing paraphrase as 'whatever is F'. And if the very reason for the statement is encapsulated in the description, its point will be lost by substitution,

a fact which becomes relevant to the truth-condition in the presence of verbs of propositional attitude (among others), which themselves connote and express such reasons. If what is said essentially involves such a reason, there is the possibility of loss of truth-value under the substitution of a non-synonymous description (one applying to an object for another reason).

4. Opacity

If we return to our original example, we can develop these points. The speaker says: "I heard it from the ticket-clerk"; a man who may also perhaps be described (by us) as the biggest liar in the neighbourhood. If we were to ask Bill, the speaker: "Do you trust the biggest liar in the neighbourhood?", there is more than one way in which he may understand our question. For obviously under this description Bill would not trust him, or believe what he had to say about railway closures. If the question could be reexpressed as: "Do you trust the biggest liar round here, whoever he may be?", the answer would naturally be negative; but if it were expressed as: "Do you trust the man who is in fact the biggest liar round here?", and in the context this referring phrase did identify the clerk for Bill, the answer would be: "I have trusted and believed him on this matter, though if he is the biggest liar, perhaps I shouldn't". Used in one way, which we are calling "attributive", a description - 'the ticket-clerk', 'the biggest liar' - invokes

the property constituted by the description in a way essential to the sentence's truth. Used in another way, referentially, the description does not play this role, but is used simply to identify a person or thing. In the referential use, the description merely carries the speaker's endorsement, so that in the example the reply is: "I have trusted him, but are you right in accusing him of being a liar?" Some predicates, such as 'I heard it from ...', apply to something irrespective of how it is denoted and of how the denoting phrase is used - if Bill heard it from the ticket-clerk, then he heard it from the biggest liar. They are "Shakespearian predicables". But other predicates are distinguished by the way the description is used or occurs. When it occurs referentially, the description in 'I trust the ticket-clerk' can be replaced without the possibility of loss of truth by the description 'the biggest liar', also used referentially. Used attributively in conjunction with this predicate ('I trust ...'), it cannot be so replaced. For either sort of predicate, the attributively used description can be said to be essential. Even when the predicate is not intensional, and truth-value does not change under substitution, one can say that the proposition - what is said - does change. For example, 'I heard it from the ticket-clerk' makes a different statement from that expressed by 'I heard it from the biggest liar'. There are, then, three cases. Reference: the description used in a referentially used phrase is not relevant to the proposition, nor to the truth-value.

Attributive use in an extensional context: the description is essential to the proposition, but not to the truth-value. Lastly, an attributive use in an intensional context: certain predicates also connote a reason for the application of the predicate. The truth-condition becomes intensional. In this case substitution under identity can change not only the proposition, but the truth-value of the proposition expressed. It is this third case which strikes home immediately in a clear difference - one of truth-value. But the underlying reason - an attributive, predicative or descriptive use of a phrase, rather than a simple (extensional) reference to an object, under no particular description - is present already in the second, where the difference is less explicit, concerning only what is said, and not resulting in a change in truth-value.

5. A Semantic Distinction

Such dependence of a referential use on context may suggest that Donnellan's distinction is purely pragmatic. This is a mistake. While what I do refer to, if I refer, depends on the context, that I am referring, or purporting to refer, need not. Perhaps whatever is referred to must exist; but I can certainly refer to Hamlet, so the cases where reference breaks down for such a reason must, as Donnellan shows (op. cit., 297) be extreme. It is, in any case, the notion of purporting to refer, that is, of using a phrase, or of a phrase's occurring, in a sentence

in a referential way, that I am attempting to analyse.

However, Donnellan did wish to describe the distinction as pragmatic (op. cit., 298). His reasons (he admitted he had no argument) were that there is no apparent syntactical difference between the uses, nor any difference in the meanings of words: the distinction would seem to be neither syntactic nor semantic.

But consider the ambiguity between attributive adjectives and appositive ones (that is, between attributive and appositive uses of adjectives): the coincidence of terminology is intended to be suggestive. For example:

2/ The philosophical Greeks were impressed by Plato.

We may take the adjective 'philosophical' here as attributive. Those Greeks who were philosophical were impressed (and those, if any, who weren't philosophical may not have been impressed). Or we may take it as appositive. The Greeks, who were all philosophical, were impressed - that is, all the Greeks were impressed, and (incidentally) they were (all) philosophical. In giving the truth-conditions of the two uses I have used attributive (restrictive) and appositive (non-restrictive) relative clauses. One could imagine a superficial reflection remarking that there was no apparent syntactic ambiguity in 2/. Yet neither is there any semantic ambiguity (in 'philosophical'). It would, however, be wrong to go on to give a pragmatic account of the difference between the uses of the adjective, in terms of audience expectations,

say, or of speaker's beliefs. We can give a deeper syntactic account of 2/ by relating the possible uses of the adjective to an underlying distinction between (the analysanda of) restrictive and non-restrictive relative clauses. This is paradigmatic of the use of deep structures in transformational generative grammar. The distinction between two (deep) structural descriptions will then lead to different truth-conditions, and a consequent semantic ambiguity (in sentence, not word, meaning).

There is no difference between the two uses of adjectives in terms of grammaticality. As a distinction between uses, that is, interpretations, we can only say that a certain sentence, for example, 'Philosophical Aristotle was impressed by Plato', cannot be interpreted as containing an attributive use of the adjective. It would be wrong to claim that a distinction is syntactic if and only if there is a basis in a difference in grammaticality. If there is a grammaticality basis, then the phenomenon must receive a syntactic explanation. This basis is, however, only sufficient, not necessary. If there is no grammaticality motivation, the distinction is still open to a syntactic account. This is what we can give by relating such uses of adjectives to the two uses of relative clauses and the syntactic account available for them.

We can do the same for our two uses of definite descriptions. As Donnellan says, the burden of proof

for a semantic (and syntactic) account of the distinction is on the other side, that is, mine: I shall eventually give this in the fourth chapter by providing an analysis of the two uses in terms of two different (kinds of) deep structural descriptions. I will however leave the syntactic account until later, and concentrate now on showing a (semantic) difference in truth-conditions.

We cannot infer that the distinction is pragmatic simply from the fact that it is expressed as a distinction between uses. Austin noted how 'uses' can cover a multitude of sins; there is nothing pragmatic about the different uses of 'band' or of 'Visiting relatives can be exhausting'. What we can fasten on to demonstrate a semantic distinction is the possibility of misdescription. Let s_1 and s_2 be two tokens of an instance of 1/, 'The F is G', with referential and attributive occurrences of 'the F' respectively, and suppose that the existential requirement of s_2 is satisfied uniquely by some object _a_. Then s_2 is true if and only if there is something which is F and is G, that is, given that the F is _a_, s_2 is true if and only if _a_ is G.

The deciding point is then whether the expression 'the F' in s_1 may, under the circumstances, not refer to _a_. Donnellan later presented several such cases where proper names may not be replaced by an attributively used description.[2] The plausibility of the description

---

2 K. Donnellan, "Proper Names and Identifying

theory of (proper) names, which insists that every name has the sense of some (one or cluster of) description(s), comes from the fact that these descriptions may be used referentially. Only so used may the description subsequently be found not to apply to the object. Suppose, for example, that I wish to scotch a rumour about Plato - I say: "The notorious Athenian Platonist was not a Platonist"; or in raising the banner in civil war I cry: "The king is not the king". (Compare Russell's quip: "I thought your yacht was longer than it is".) In the context my description serves to pick out a certain individual, whom I proceed to defend or denounce as not deserving the description. The sentence can be true only if the description is used referentially. Similarly in our schematic case. If the context is sufficient to show to whom I have attempted to refer, my audience may reply: "No, he's not G - and, by the way, he's not F (either, any more, yet, etc.)". This may certainly be the case if there is no F. But it may also hold if there is - namely a; all the same it can be clear that I am referring to b. So s_1 is true if and only if b is G, and the truth-conditions are different. The distinction between the two ways of using the description, although involving pragmatics in the application of the content of the description in identifying

---

Descriptions", in D. Davidson & G Harman (edd.), Semantics of Natural Language (Dordrecht, 1972), 356-79.

an object in the context in the one use, is straightforwardly semantic, in yielding different truth-conditions. The difference of truth-conditions comes out if we look at what is said (the statement or proposition). In the referential case that this thing is G, in the attributive, that whatever is F is G. If indeed we could only refer to this thing using the description 'the F' if this thing were F, then there could be no difference of truth-value. So to show a difference in value we need to look at a case of misdescription, when 'the F' refers to something which is not F. What matters then, as Donnellan emphasised, is not the question of non-existence, which Russell and Strawson concentrated on, but that of misdescription or misreference. Non-existence could at most give us a case where the one use involved a false statement, the other no statement at all. But with misdescription we can oppose one clearly false with another clearly true.

6. The Scope Analysis

In his analysis of denoting phrases, Russell distinguished between a primary and a secondary occurrence of the description by its scope.[3] He analysed 'The F is G' as ' $\exists!x(Fx \& Gx)$', where this expression abbreviates ' $\exists x((\forall y)(Fy \equiv x=y) \& Gx)$'. Therefore, embedding 'G' in some larger context 'H' gives rise to an ambiguity of

---

3 B. Russell, "On Denoting", Mind 14 (1905), 489.

scope: 'H(G(the F))' can be read as

3/ $\exists!x(Fx \& H(Gx))$,

or as 4/ $H(\exists!x(Fx \& Gx))$.

In the former, 'the F' has a primary occurrence, in the latter a secondary one. If 'H' is a truth-functional context (such as negation), and there is just one F, 3/ and 4/ are equivalent. But they are not so equivalent in non-truth-functional contexts. As Smullyan and Quine observed,[4] there are contexts where the scope of the description makes a difference to the truth-value even when there is an F.

Contra Quine, Russell himself applied this observation to account for his own first puzzle, about the "interest in the law of identity" which it appeared must "be attributed to the first gentleman in Europe" (op. cit., 485, 489). When 3/ and 4/ are equivalent, one may substitute for 'the F' salva veritate under identity. But with such a context for 'H' as 'George IV wished to know whether ...', this is no longer permissible.

Such scope ambiguities do exist. What I wish to query is whether they in fact capture the ambiguity which Quine expresses as that between "positions where [a definite singular] term is used as a means simply

---

4 A. Smullyan, "Modality and Description", Journal of Symbolic Logic 13 (1948), 33; W.V. Quine, "Reference and Modality", in From a Logical Point of View (Cambridge, Mass., 1961), 154.

of specifying its object, or purporting to, for the rest of the sentence to say something about, and [ones] where it is not."[5] That is, such scope ambiguities neither reveal why we may substitute under identity *salva veritate* for referring terms in intensional contexts, nor do they capture the distinction between referential and attributive uses of nounphrases. Let us start with the latter.

That there is no scope ambiguity present in the referential/attributive distinction follows immediately from the fact that we can distinguish between these two uses in simple sentences of the form 'The F is G', for example,

5/ The book on the table is *Individuals*.

In the discussion of Donnellan we saw how a description could be used to specify or pick out someone for which any other description, with the speaker's endorsement, would do. And that use carried a specific presumption, such that the sentence was construed as asserting some specific object or person to be of the sort asserted. If 'the book on the table' is used referentially in 5/, the sentence asserts of that specified object that it is a copy of *Individuals*. On this interpretation we can, if, for example, the book is the one John was reading yesterday, infer that the book John was reading yesterday was *Individuals*. But the Russellian representation of 5/, in

---

5 W.V. Quine, *Word and Object* (Cambridge, Mass., 1960), 141-2.

which the description is replaced by a quantifier with wide scope, that is, exhibits a primary occurrence, presents the much weaker statement that there is just one thing which is a book on the table and is a copy of Individuals. This is entailed by the former statement (that the book specified is one of Strawson's) if the book was correctly referred to, but it does not entail it, and they are not equivalent. 'Ga' is not logically equivalent to ' ∃xGx', or even to ' ∃!x(Fx & Gx)' for some description 'F'.

Referring back to §5, we saw there that s_2, in which the description occurs attributively, is true if and only if something is both uniquely F, and G. If the F is a, then this existential condition and 'Fa' always have the same truth-value. But they are not the same truth-condition; we can require logical equivalence to identify truth-conditions, whereas here the (material) equivalence relies on the contingent fact that a is the F. The truth-condition of a primary occurrence of a description then shows it to exhibit an attributive use of the description (as Donnellan in effect noted, by remarking that Russell concentrated on the attributive use). The existential condition gives a much weaker interpretation to the statement than a really referential use. The existential quantifier is made thoroughly indeterminate or non-specific by its correlation with the universal quantifier. The referential use captures an intuitive use of "'someone in particular', and not merely the existential quantifier

'there is someone or other'".[6]

That the attributive use is quantificational can also be shown by an argument drawn from Frege's demonstration that quantified phrases are not semantically unified in the way that what he calls Eigennamen are.[7] "Individuals is not the book on the table, whatever book is there" says, inter alia, that no book on the table is Individuals. "Individuals is not that book - see, the one on the table" denies only that that book is Strawson's, without regard to any other. In the latter the negative attaches to the main verb, and the article gives way, if at all, to a demonstrative. In the former, the negation is attracted to the determiner position, producing a quantifier.

Why might we wish to construe $\ulcorner \exists v A \urcorner$ as exhibiting a specific sense of 'someone'? I think there are two reasons. One is that the rule of existential generalisation allows the inference of $\ulcorner \exists v A \urcorner$ from A(m/v), for any proper name m; but $\ulcorner \exists v A \urcorner$ doesn't say that some particular thing is A - generality has been introduced. It can't, for it wouldn't then be equivalent to $\ulcorner \sim \forall v \sim A \urcorner$. And

---

6 Donnellan, "Reference and Definite Descriptions", 299.

7 G. Frege, "On Concept and Object", in P. Geach & M. Black (edd.), Philosophical Writings of Gottlob Frege (Oxford, 1966), 48; "A Critical Elucidation of Some Points in E. Schroeder's Vorlesungen ueber die Algebra der Logik", op. cit., 93 n.

moreover, it can also be inferred from A itself, containing v as a free variable. $\ulcorner \exists vA \urcorner$ is ambiguous between these, and being deducible from either, cannot say more than the weaker. So that 'There is a copy of Individuals on the table' doesn't refer to any particular book. Obviously, if something is F, some particular or specific thing is F, for that's the only sort of thing there is; but we haven't specified which one it is. The word 'specific' does not connote a property, but a way of speaking. Nor can we, in the metatheory, describe this notion except in terms which themselves admit the referential/attributive distinction. That distinction is, therefore, not a scope distinction. What does this show us about opacity, and about Quine's notion of a non-referential use of expressions?

A limitation of a scope analysis applied to opacity is that it cannot cope without additional moves, with, say, 'Oedipus fears his mother', or 'Do you trust the ticket-clerk?' We may well not wish the former to commit us to the statement that Oedipus fears the Queen of Thebes. If not, we are using the phrases 'his mother' and 'the Queen of Thebes' attributively, or, in Quine's terms, "not purely referentially". (Impurity of reference is not given by failure of substitutivity. But here they go together.) There is no narrow scope seemingly required for this interpretation; the description cannot exhibit a secondary occurrence. A scope distinction can be obtained only by the lexical decomposition of 'fear' to

yield, say (following Lakoff), 'Oedipus WURFS to GLIP his mother', as Quine decomposes 'hunt' into 'endeavour to shoot'. But there is every reason to suppose from Donnellan's account that, given appropriate circumstances, a descriptive phrase can have an attributive or a referential use in any simple (non-compound) attitudinative sentence. Anyone who proposes such decomposition should realise the extent of its unacceptable consequences.

If we turn now to a straightforward case of opacity where there is an embedded sentence, and a Russellian distinction between primary and secondary occurrences can be spelt out, we can repeat the observation about such an analysis using a quantifier that were made about sentence 5/.

6/ Oedipus wants to marry his mother.

The analysis which gives the description wide scope is

6'/ $\exists$ x(x is Oedipus' mother &
Oedipus wants to marry x),

that is, there is someone who is Oedipus' mother and (whom) Oedipus wants to marry. This merely informs us that Oedipus wishes to marry (one of) whomever is his mother. Once again, such an indefinite statement misses the directedness or specificity of reference. If we wish to make a statement about Oedipus' concern with some person, regardless of how described, we will not succeed in doing so by speaking of Oedipus' concern with whomever has such and such a property (falls under some particular description).

7. A Three-Fold Ambiguity

Following Donnellan's remarks, we have seen that the existential quantifier does not capture claims about a particular thing. There is a sharp contrast between on the one hand reference, where a definite description is related (refers) to a particular and specified object, and on the other, a quantified occurrence of that description. Reference is a characteristic of proper names. But the mistake is to suppose that only proper names have this property. Indeed, if presented with what a Russellian analysis of definite descriptions, using the Fregean scope analysis of the quantifiers, would describe as two layers of quantifiers, we are led to distinguish a three-fold ambiguity: reference, particular quantifier outermost, and particular quantifier innermost (the two last of course collapse - that is, are equivalent - if, say, that quantifier is embedded under another particular quantifier).

Dummett has recently argued for recognition of Frege's achievement in discovering this structural analysis of quantification.[8] But the immensity of Frege's achievement has blinkered us in attempts to solve the problems of intensional contexts. The difference between '$\exists !y \forall x Fxy$' and '$\forall x \exists !y Fxy$' is not that the former

---

8 M. Dummett, Frege: Philosophy of Language (London, 1973), esp. Ch. 2.

refers to anything while the latter does not. Rather, the former is true only when F relates everything to the same thing; the latter both then, and in the more general case where the range of F has more than one element. That is why the implication goes only one way. We can specify the value independently of the argument only in the former case - but we didn't.

The very same is true of

7/ $\exists !x$(Fx & John believes that Fred loves x)

and 8/ John believes that $\exists !x$(Fx & Fred loves x).

In the first case we <u>can</u>, but <u>didn't</u>, specify the F Fred loves independently of John's beliefs; in the latter we cannot. Only in this way can we give any sense to the analogy between this embedding and the above embedding of quantifiers. Both 7/ and 8/ represent attributive readings of 'the F' in 'John believes that Fred loves the F'. Neither captures a referential use, or shows what reference is. 7/ differs from 'F(Mary) & John believes that Fred loves Mary', in the same way that 'Someone came to dinner' differs from 'Mary came to dinner'. Even if Mary is the F, only the second member of each pair contains a term which refers to Mary. The sentence operator 'believes that' introduces a complication, but it does not create the difference between specific and non-specific. We now distinguish 'Mary is believed by John to have come to dinner' from <u>two</u> uses of

9/ The F is believed by John to have
come to dinner,

both containing attributive occurrences of 'the F', one where the quantifier has wide scope, the other where it is embedded. And 9/ still has another use in which 'the F' does refer to Mary.

8. Conclusion

We may summarise the conclusions of this chapter. Reference and referring expressions are not to be confused with, and certainly not to be analysed in terms of, quantification and quantified expressions. Attributively used definite descriptions are quantified phrases, and their analysis should show this. Though we may wish to speak of an attributively used phrase referring to something (in that "weak sense" Donnellan talks of), to do so is misleading, for the referential use gets its name precisely from its showing what reference is. If an object is referred to by an expression in a sentence, then the sentence is true or false independently of how the object is referred to. In this way reference is guaranteed extensional. Substitutivity salva veritate is a necessary condition of reference.[9]

Scope differences of quantifiers neither capture the referential/attributive distinction, nor give an explanation of opacity. Firstly, because not all opaque

---

9 Dummett, op. cit., 187.

sentences contain an embedded clause, in terms of which to spell out a scope ambiguity. Secondly, because a term analysed with an outermost existential quantifier is not used to specify or refer. Substitutivity (which a primary occurrence allows) is not a sufficient condition for reference. However, the referential/attributive distinction does explain our intuitions about the ambiguity present in intensional contexts. For an attributive use of an expression is a necessary condition of its being non-substitutable in an opaque context.

Chapter Two: Logical Form

1. Introduction

In the following two chapters I will attempt to set out the logical forms of quantified and referring phrases. Before I can set about doing this, I need to consider in general what the logical form of an expression is, what task is performed by stating (truly) that such and such is the logical form of a particular expression, and of the sentences in which it occurs, and in what way such a form can be said to be explanatory of what it represents.

The logical form of an expression will be a canonical representation of it explanatory in some way to be specified of its logical properties. The logician's task is systematically to formulate the logical interrelations of sentences. Usually these sentences will belong to one language. But the interrelations of his concern are universal. Hence, if f is a translation function from language L to L', and R is a logical relation, then expressions a and b in L are R-related if and only if expressions fa and fb in L' are also R-related. That is, f is a homomorphism on the logical algebra of L. One means of performing this systematisation and explanation of such relations is to regiment the sentences of a language to a set of canonical items. The structure

of these items should be such that their logical connections are, in comparison with the complexity of the original sentences, relatively clear. Of course, the complexity must be tackled somewhere. If it is not in the direct statement of the logical relations, then it must be done in the regimentation. These canonical items may belong to the same language as those represented - the regimentation may then be termed a paraphrase. Or they may belong to another, in our case, formally constructed, language - the regimentation may then justly be called a translation.

If our aim is proof-theoretic, it may be impossible to locate a unique logical form. Our aim will be to produce a number of forms of valid argument, or rules of inference. Any one sentence may then need to be regimented to a place in any number of these forms, all emphasising distinct features of the sentence. For example, sentence 3a/ (below) 'Cathy is tall and slim' has both the form 'Fa' (in order to fit the argument-schema $\forall xFx \vdash Fa$, and be inferred from 'Everyone is tall and slim'), and the form 'Fa & Ga' (in order to fit the argument-schema $Fa \,\&\, Ga \vdash Fa$, and entail the sentence 'Cathy is slim').

But if we are concerned with semantic consequence, we wish to demonstrate truth-preservation under all interpretations. The forms into which we will regiment sentences will not differ between different consequence relations (for example, propositional versus predicate, or intuitionistic versus classical), but those forms

will be simply a canonical input to our semantics.

2. Ad Hoccery and Logical Consequence

Consider these pairs of sentences:

1a/ John is a bachelor

1b/ John is unmarried

2a/ John knows that grass is green

2b/ John believes that grass is green

3a/ Cathy is tall and slim

3b/ Cathy is slim.

Does each a-sentence entail the corresponding b-sentence? Which, if any, of these are logical entailments, to be explained by the logician, and which, if any, are not? I want to distinguish between *ad hoc* accounts (which are, in a sense, non-explanatory) and systematic accounts (which, in contrast, are explanatory). Each of 1a/, 2a/ and 3a/ is equivalent to a conjunction, one of whose conjuncts is respectively 1b/, 2b/, and 3b/; namely:

1c/ John is human & John is unmarried & John is male

2c/ John believes that grass is green & grass is green & John has reason to believe it

3c/ Cathy is tall & Cathy is slim.

We can now ask two questions. Firstly, what is the nature of this equivalence (and is it the same in each case)? Secondly, is the principle whereby each

c-sentence entails the corresponding b-sentence logical?

Let us consider those words which can occur both in the context

4/ Cathy is tall ... slim

and in 5/ Cathy is tall ... Cathy is slim,

that is, the class of conjunctions. (We might indeed wish to extend it to (unitary) phrases, though this extension might bring added problems in what follows.) It would seem that this set of words, defined by their possibility of occurrence in the frames 4/ and 5/ (their co-occurrence), constitutes a word-class for which, as a whole, the completion of 4/ is (logically) equivalent to the (same) completion of 5/. This suggests that the equivalence of 4/ and 5/ (duly completed) is a structural and syntactic generality.

It follows that the equivalence between 3a/ and 3c/ is syntactic. But this is not true of 1/ and 2/; we cannot similarly pick out one (or more) elements to state a corresponding generalisation. The equivalence here depends on the particular meanings of 'bachelor' and 'know'. It does not hold for other words (such as 'spinster' or 'philosopher', or 'disbelieve' or 'hope') which co-occur with these. In particular we note that 'and' occurs in both 3a/ and 3c/ - indeed, just the same words occur there, though there is repetition (or permutation). Whereas other words, related by meaning to 'bachelor' and 'know', occur in 1c/ and 2c/, and not in 1a/ and 2a/.

We have initially pinpointed a difference between the equivalence of the a- and c-sentences in 1/ and 2/ on the one hand and 3/ on the other. We can say that the equivalence in 3/ is systematic (general to the word-class) and syntactic (or structural); that in 1/ and 2/ is ad hoc and (merely) semantic (or lexical), depending only on the meanings of particular words.

What, however, of the relation between the c- and b-sentences? These all exemplify the general form

$$6/ \quad \frac{\phi \text{ and } \psi}{\phi}$$

This would normally be taken to be a logical entailment. However, it does not apply to all words of the word-class of 'and': for example, ϕ does not follow from $\ulcorner \phi$ or $\psi \urcorner$. The implication in 6/ seems to depend solely on the particular meaning of the word 'and'. Is it then ad hoc and lexical?

The inference is certainly semantic and lexical in the sense that it depends on aspects of the meaning of 'and' not shared by other words of the same type (for example, 'or'). What I wish to claim is that there are some words (of which 'and' is one) whose meaning does in this way especially constitute the matter of logical inference. The point has been elaborated by Prawitz from the work of Gentzen. Gentzen claimed that the calculus of natural deduction which he formulated was "remarkably systematic ... The introduction [-rules]

represent, as it were, the 'definitions' of the symbols concerned, and the elimination [-rules] are no more, in the first analysis, than the consequences of these definitions." Thus the meaning of certain words is constituted solely by their being introduced by a logical inference. In elimination of the symbol we use only the information given by its being so introduced. Prawitz calls this "the inversion principle".[1]

Which words satisfy this principle? In other words, which are the logical constants? What, further, distinguishes 'and' from 'bachelor' and 'knows' is that the introduction (and the elimination) rule for 'and' requires the use of no other specific words (of its own, or any other, word-class). Suppose we tried to frame the introduction rule for 'know'. It might read:

S believes that p & p & S is justified in believing that p

S knows that p

The rule involves essential use of 'believe' and 'justify'.

---

1 D. Prawitz, "The Philosophical Position of Proof Theory", in R. Olson & A. Paul (edd.), Contemporary Philosophy in Scandinavia (London, 1972), 132-3; Meanings and Proofs (Oslo, 1976), 29-30. G. Gentzen, "Investigations into Logical Deduction", trans. in M. Szabo (ed.), The Collected Papers of Gerhard Gentzen (Amsterdam, 1969), 80.

Whereas the introduction rule for 'and' is concerned solely with deduction. It says:

$$\frac{\phi \qquad \psi}{\phi \text{ and } \psi}$$

Here is the second way in which 'and', and the inferences which it permits, are structural (and systematic). 'And' is a logical constant; 'know' is not.

We can therefore conclude that the inference in 3/ is a logical entailment, depending firstly on the syntactic rule of "conjunction reduction" and secondly on the elimination rule for 'and', which is itself a logical entailment allowed precisely by the meaning of the logical constant 'and'. While those in 1/ and 2/ are not logical entailments. Although they proceed via the same (logical) elimination rule for 'and', they also require the ad hoc and unsystematic "substitution of synonyms for synonyms". They do not fall within the province of the logician to explain.

3. Davidson's account of action sentences

What then of this pair?

7a/ Dalrymple polished his hubcaps with a duster

7b/ Dalrymple polished his hubcaps.

Davidson claimed that this is a logical entailment, to be explained by regimenting 7a/ to a logical form from which 'and'-elimination will, as in 1/, 2/ and 3/, yield

7b/.[2] So the question arises: is the relation between 7a/ and

7c/ ∃ e(e was a polishing by Dalrymple of his hubcaps & e was with a duster)

an equivalence, and, if so, is it one to concern the logician? In other words, is 7c/ the logical form of 7a/? (3c/ is the logical form of 3a/. Is 2c/ the logical form of 2a/? Or 1c/ that of 1a/?) The logical form of a sentence is to be that one of its logical equivalents which is (for Davidson) composed of a previously selected finite number of semantical primitives, and is most clearly indicative, by its categorial (that is, recursive) structure, of the logical consequences into which it falls, by the revealing in this form of its truth-conditions.[3]

I have sketched three accounts of entailments in my discussion of 1/, 2/ and 3/. Ad hoc and semantic entailment (e.g. 1a/ and 1c/); systematic and semantic entailment (e.g. 3c/ and 3b/); and systematic and syntactic entailment (e.g. 3a/ and 3c/). Into which, if any, of these categories does the relation between 7a/ and 7c/ fall?

---

2 D. Davidson, "The Logical Form of Action Sentences", in N. Rescher (ed.), The Logic of Decision and Action (Pittsburgh, 1967), 81-95.

3 For example, Davidson, op. cit., 82.

Davidson's idea is that if we can present 7a/ as fundamentally a conjunctive structure (albeit embedded under an existential quantifier), we can explain the removal of the adverb in passing from 7a/ to 7b/ as an instance of 'and'-elimination. So the latter step would clearly be a logical inference. To show that the passage from 7a/ to 7b/ is logical, it remains to show that that from 7a/ to 7c/ is logical and systematic.

The presence of such adverbial phrases as 'in a dream', 'in spirit', 'virtually', 'incompletely', 'nearly', and others shows that the relation is not simply structural. All these phrases co-occur with 'with a duster'; but 7b/ may not even be materially implied by, for example, 'Dalrymple polished his hubcaps in a dream'. Thus the inference from 7a/ to 7c/ depends on aspects of the meaning of 'with a duster' which, though shared with other members of the same word-class (for example, 'carelessly', 'at midnight', 'with enthusiasm'), is not shared with all. What considerations, therefore, will lead us to classify 'with a duster' with 'and' or with 'know' and 'bachelor'?

There are two considerations we may adduce in support of an intuition that 'with a duster' is not a logical constant. Firstly, we cannot give an introduction rule for it on analogy with the rules for 'and', 'or', 'for all' and so on. Those rules allow one to infer a sentence Φ containing the logical constant from

one or more sentences which are subformulae of ϕ , and lack that occurrence of the constant. Otherwise the statement of the rule requires only proof-theoretical notions, such as 'derivable'. For example, the introduction-rule for 'implies' states:

> If ψ is derivable from $\Gamma \cup \{\phi\}$, then
> $\ulcorner \phi$ implies $\psi \urcorner$ is derivable from Γ .

Secondly, whereas 'and' can be applied to talk of proofs and inferences themselves, 'with a duster' cannot. It is this in fact which rules out an introduction-rule for it. The introduction-rules for the logical constants are what allow Prawitz to replace the classical truth-semantics in terms of T-schemata (for example, $\ulcorner \phi$ and $\psi \urcorner$ is true if and only if ϕ is true and ψ is true) by an intuitionistic semantics using derivability ($\ulcorner \phi$ and $\psi \urcorner$ is derivable from $\Gamma \cup \Delta$ if ϕ is derivable from Γ and ψ is derivable from Δ). Not only is the meaning of 'with a duster' not exhausted by talk of logical inference, it has nothing whatever to do with it; it is not required by the inductive definition of (logical) derivability.

So 'with a duster' is on a par with 'knows' and 'believes'. The inference from 7a/ to 7b/ is not a logical entailment, but depends on <u>ad hoc</u> aspects of the meaning of 'with a duster'. What then was Davidson's point in producing 7c/ as its purported logical form?

His aim purported to be the demonstration of the

logical entailment of such sentences as 7b/ from such as 7a/. Central to his effecting this was an assertion that an adequate account of the truth-conditions of 7a/, one which states how its meaning depends on its structure, makes the following claims. The phrase 'with a duster' is fundamentally a predicate of events; 'polished' is a relation holding between three elements (one of which is an event); and, in consequence, action sentences (such as 7a/) commit us, in an adequate statement of their meaning, to an ontology of events.

In this, it seems to me, he exceeds his brief. The aim is the presentation of a logical form for 7a/, one which reveals how it stands in the relation of logical consequence with other sentences. Davidson understands the inference in 7/ to be logical; but it is not - no more than that in 1/ is. The reason is the presence in the same category of words of expressions such as 'nearly' and 'in spirit'. What we should be sensitive to in looking for a logical account of the sentences of a language are the syntactic issues which are of direct concern to the linguist. For example, while 'nearly' and 'neatly' belong together syntactically, they, as manner or verb-phrase adverbs (and adverbial phrases) are to be distinguished grammatically from sentence adverbs (and phrases) such as 'surprisingly', 'unfortunately' and 'possibly'. I assume, for example, that Davidson would give as the logical form of

8a/ Dalrymple possibly polished his hubcaps,

such a sentence as

8b/ $\Diamond$ ($\exists$ e) Dalrymple polished his hubcaps(e)

and not 8c/ ($\exists$ e)(Dalrymple polished his hubcaps(e) & e was possible).

He would then have shown himself, like most logicians in their slightly different ways, sensitive to such syntactic differences.

We have yet to discover how much, and what, structure an account of truth-conditions requires. I claim however, that to the extent to which logical form is necessitated by an account of logical relations, 7c/ is not the logical form of 7a/.

4. Syntax and Semantics

There are many features of syntax which, though at first they may appear not to involve logical relations, are such that mention of that feature is necessary (but in general by no means sufficient - for instance, 3/ above) to account for the logical relations of certain sentences. Furthermore, in giving a logical account of the language, we must also be sensitive to the general account of the truth-conditions of its sentences. This is clear when we come to consider the relation between syntax and semantics, and in particular the dependence of the truth-theory on the rules of syntactic formation.

Following the need expressed for sensitivity to purely syntactic features, I shall turn shortly to draw on investigations of language made by the transformational generative grammarians. We can then express the dependency of semantics on syntax as follows. Any simply semantic (that is, lexical) account of truth-conditions would be ad hoc. Rather, we should restrict ourselves to theories conforming to one basic structural idea: that the recursive rules of the semantics, proceeding from an initial assignment to the simplest expressions and so finally assigning truth-values to sentences, should follow exactly in their recursion the inductively framed phrase structure rules of the base component of the syntax. The idea of a transformational generative grammar is that, while the set S of sentences (surface structures) of the language cannot, adequately for semantic description, be generated by a phrase structure grammar, there is another set of expressions, call it D, which can be given a phrase structure generation properly revealing semantic relations, and which can be systematically related to S. Initially the set D was a subset of (n-tuples of members of) S - it was the set of kernel sentences. However, with the rise of meaning-invariance (see below) from the more careful working out of the idea that D was an adequate input to a semantic component, D became a set of more abstract structures. But the idea remained (perhaps as what Chomsky would call a refutable empirical

hypothesis) that D is to be characterised by a phrase structure grammar. This grammar then provides each member of D with a structural and categorial analysis dependent uniformly on the transformational component T (which links D with S). The structural description of each member of D provides for those members of S related to it by T an adequate input to a semantics whose output is a truth-condition. The details of this will become clearer as we proceed.

Firstly,let us dwell a moment longer on the wrongs of a purely semantic account. In being non-syntactic, and so not structural, this would then be simply lexical (as in 1/ and 2/). An example of such an account can be seen in what must constitute Jackendoff's reply to Chomsky's original reason for postulating a transformational component. Chomsky looked at such sentences as:

9a/ John is easy to please

9b/ John is eager to please.[4]

---

4 See, for example, G.A. Miller & N. Chomsky, "Finitary Models of Language Users", in R.D. Luce, R.R. Bush & E. Galanter (edd.), Handbook of Mathematical Psychology (New York, 1963), Vol. II, 476-80; N. Chomsky, Current Issues in Linguistic Theory (The Hague, 1964), 34ff. R. Jackendoff, Semantic Interpretation in Generative Grammar (Cambridge, Mass., 1972), Ch. 5. Chomsky's arguments in Syntactic Structures (The Hague, 1957), Ch. 5,

In 9a/ 'John' is implicitly (that is, logically) the object of 'please', while in 9b/ 'John' is its implicit subject. The structural description on which the semantics operates to produce the truth-conditions of, say, 9a/ must indicate that 'John' is the object of 'please' (and, for 9b/, its subject). Chomsky insisted that the grammar was descriptively inadequate if it did not reveal this. Thus he rejected a phrase structure grammar on semantic grounds - for such a grammar <u>can</u> generate just the grammatical sentences of, say, English. What it cannot do is reveal a structural difference between 9a/ and 9b/, nor provide alternative structures for certain intuitively ambiguous sentences. Chomsky therefore chose to generate 9b/ by constructing a deep structure on the lines of

9c/ John is eager that John please

by a phrase structure component of the grammar, on which a transformational component would operate to delete one occurrence of 'John' under identity with the other (by Equi-NP deletion). The deep structure then (structurally) contains the information that 'John' is the subject of 'please', and the semantics can operate directly on the deep structure - and operate in uniform connection with

---

in terms of simplicity, can be seen to be making the same point. In ch. 8, these arguments were given their semantic expression.

the fact that the second occurrence of 'John' will be deleted transformationally. By 'uniform' I mean that there is nothing particular about this deep structure (9c/) which indicates such deletion, but that all deep structures of this form undergo Equi-NP deletion.

Jackendoff does not wish to deny that there is a transformational component. He insists, however, that the gap between deep and surface structure should be as small as possible. Indeed, the paucity of transformational effect is claimed as a virtue, and as a measure of the correctness, of the grammar. In particular, he rejects any deletion transformations, laying down that no token item occurring in deep structure may fail to appear in surface structure. This is an extreme form of Recoverability, on which all versions of transformational grammar rely. Equi-NP deletion satisfies the usual form of requirement, since the deletion is under identity with an item which remains. However, without any deletion possibilities, it is necessary to account for the difference between 9a/ and 9b/ semantically - that is, lexically. So that the "meaning" assigned to 'easy' itself reveals that its subject is also object of its complement verb. Similarly for 'eager', that its subject is respective subject. No doubt there are many such items where this sort of ad hoc account is possible. But rather than rely on the objection simply that it is ad hoc, consider complex predicates, such as 'stupid enough' in

10a/ Rennie is stupid enough to shoot.

To cope with such predicates we need to find a systematic account; we cannot pretend that the "meaning" of 'stupid' specifies in particular that when combined with 'enough' and introducing a complement clause, the main subject can be either subject or object of the complement verb, and that the ambiguity in 10a/ is a matter of two meanings of 'stupid'. Jackendoff cannot here refer to surface structure interpretation rules. There is only one surface structure, yet for him only one deep structure also. The general and syntactic account explains the ambiguity in 10a/ by deriving it from two different deep structures:

10b/ Rennie is stupid enough that Rennie shoot

10c/ Rennie is stupid enough that one shoot Rennie.

Given this syntactic difference in structure, the semantics can operate differently, resulting perhaps in a difference of truth-value.

5. The Semantics

The groundwork of this recursive semantics was laid by Tarski. The language with which he worked had a rather simple syntax. There was no (semantic) need to distinguish two levels of syntax. The atomic sentences consist of some individual expressions, constants and

variables (considered semantically as name-expressions), and a predicate expression (considered semantically as characteristic of a set). Their combination is assigned the truth-value 'true' under a particular interpretation if and only if the ordered sequence of individuals assigned by that interpretation to the individual expressions is a member of the set assigned to the predicate expression. These atomic sentences can be recursively combined by Boolean operators, treated semantically as functions from truth-values to truth-values. Quantified sentences can now be treated: for example, $\ulcorner \forall\ vA \urcorner$ is true under I if and only if A is true under every interpretation which differs from I at most in its assignment to the variable v.

For elegance, this account can be complicated by the introduction of satisfaction by sequences (perhaps for more than elegance if we dislike assigning a truth-value to open sentences). Even when it is, the essential point is still the (eventual) assignment to a (closed) sentence of a truth-value under an interpretation - that is, the assignment to each sentence of a truth-condition. It is instructive to compare it with the interpretative semantics of Katz and Fodor, for they wish to assign to a sentence a semantic interpretation - its "meaning". Consider that interpretation which assigns to 'Theaetetus' individual A and to 'flies' the property Φ (or the set $\hat{\Phi} = \{ x: \Phi x \}$). Katz and Fodor's semantic component

assigns to 'Theaetetus flies' the complex object Φ A (or A Φ ?). The Tarski semantics assigns to it a truth-condition, namely that it is true if and only if A has the property Φ (under this interpretation), that is, A belongs to the set $\hat{\Phi}$. In a misguided way Katz and Fodor do give us the T-schemata - the truth-conditions; the objection to their approach is, however, not simply that they obscure this with their talk of curious unexplained complex objects. For ' Φ A' may just be a nominalised expression of (what Lewis pejoratively called) Semantic Markerese. And that language may be a good metalanguage for English (or even for all languages). For example, the assignment to

11/ The man hits the colorful ball

of the conversion of Katz and Fodor's lexical reading into such a sentence as

12/ Some contextually definite adult male human physical object collides with intended impact with some contextually definite physical object abounding in contrast or variety of bright colors and having a globular shape,[5]

does fairly well express the truth-condition of 11/. But Katz and Fodor claim that 12/ is the meaning (or at

---

5 Adapted from J.J. Katz and J.A. Fodor, "The Structure of a Semantic Theory", Language 39 (1963), 204.

least, one of the meanings) of 11/. That claim obscures the fact that an interpretation of a language assigns objects to certain expressions and truth-values to sentences. The Katz-Fodor approach is rightly dismissed as Semantic Markerese not because it assigns so-called semantic markers or lexical readings to sentences (via deep structures), but because that is all it does. Nowhere does it assign individuals to referring expressions nor truth-values to sentences. The meaning of a sentence is not a sentence (or its nominalisation) in a metalanguage, nor a less tangible object, but is the way its truth-condition depends on its component expressions, and their use to refer and to predicate. Semantics is not the assignment of meanings, but of individuals and truth-values.

6. The Syntax

The usual Tarski semantics for first order logic which I have invoked is framed with respect to a very simple syntax. We cannot see how it needs to be extended until we have a sufficiently powerful syntax. Since in the next two chapters in my search for an understanding of quantified and referring expressions through their different logical forms I will give substance to the above demand for sensitivity to syntactic theory by, at least provisionally, identifying logical form with the deep structure of some reasonably

straightforward transformational generative grammar, it will be useful here, very briefly, to detail the theory to be used. The regimentation to logical form is here a translation - via the transformations. (Harris' use of transformations which lies in the background was a paraphrase relation into canonical sentences.) Transformational linguists are noted for their reluctance to be specific about, for example, surface structure categories. I will however rely on some agreement about the analysis of phenomena such as passive, pronominalisation, relative clauses, adjectives, adverbs, conjunction reduction, and so on. I assume the normal battery of transformations (as given, say, by Bach[6]), but will take the particular viewpoint that adjectives are nounphrases, that auxiliaries, sentential adverbs and (to be argued in the next chapter) quantifiers are higher verbs, and that the 'that' of complement clauses and the determiners are to be introduced transformationally. As a base component the following will suffice for present purposes:

$$S \rightarrow V \quad NP \quad (NP)$$

$$NP \rightarrow \begin{cases} (NP) & S \\ N \end{cases}$$

---

6 E. Bach, Syntactic Theory (New York, 1964/74).

$$
\begin{aligned}
V \rightarrow & \begin{cases} V \quad ADV \\ \text{be Pred} \\ \text{Aux / S___} \\ \text{Adv / S___} \\ \text{Q(uantifier) / S___} \end{cases} \\
\text{Pred} \rightarrow & \ (NP) \quad (ADV) \\
\text{Aux} \rightarrow & \ \text{Tense} \quad \text{Aspect} \\
ADV \rightarrow & \begin{cases} \text{Adv} \\ \text{Prep} \quad NP \end{cases}
\end{aligned}
$$

7. The Dependency of the Semantics on the Transformations

Tarski's T-schemata may now be generalised to cover these much more complex structural descriptions. For example, let 13/ be

$$[_S\ [_V\ [_{Adv}\text{sudden}\ ]\ ]\ [_{NP}\ [_S\ [_V\ [_{Aux}\text{past}\ ]\ ]\ [_{NP}\ [_S\ [_V\text{seize}\ ]\ [_{NP}\ [_N\text{John}\ ]\ ]\ [_{NP}\ [_N\text{gun}\ ]]]]]]]\ '.$$

Then we must be able to derive: 13/ is true if and only if John seized the gun. For this to be possible the semantics will depend on the transformations which will apply to this structure. In particular, therefore, those transformations must result in, at least among others synonymous, the surface sentence 'Suddenly John seized the gun'. It is because here the metalanguage is homophonic that the semantics appears to duplicate the transformational component. Such was one charge that Lakoff and other generative semanticists addressed to

interpretative semantics, especially that of Katz and Fodor.[7] But what is in fact the case is that the deep structural description in particular governs which semantic rules of interpretation operate, and those rules in general depend (that is, depend uniformly) on the transformational component as a whole, without regard in their formulation to which particular transformations are called into play by the particular deep structure. In the same way, in first-order logic, the semantic rule specified above to assign a value to $\ulcorner \forall\, vA \urcorner$ depends on the intuitive "transformation" which translates $\ulcorner \forall\, vA \urcorner$ as $\ulcorner A(\text{everything}) \urcorner$. We can translate sentences of the (pretheoretical) form $\ulcorner \phi$ and $\psi \urcorner$ into first-order logic as, say, 'P^{o} & Q^{o}' because the truth-condition in the semantics of first-order logic specifies: T_I (ϕ & ψ) iff T_I (ϕ) and T_I (ψ), and the Completeness Theorem assures us that the rules of &-introduction and &-elimination correspond exactly in meaning with this.

There is one way of presenting generative semantics which implicitly recognises this method of interpreting first-order logic, namely that which identifies the semantic representation which is input to the transformational component with the forms of that, or some

---

7 G. Lakoff, "Repartee", Foundations of Language 6 (1970), 411-2, 419-22.

similar, calculus, already provided with an adequate (Tarski) semantics. But there is a different mode of presentation of generative semantics which takes the input to the transformations to be in some other way a "semantic representation" of the sentence. That is, as itself encapsulating the meaning of the sentence, and not itself to be further interpreted. A similar view must be held also by those, admittedly opponents of generative semantics, who claim that it is merely a notational variant of interpretative semantics.[8] Their conception is of the semantic component as mapping from deep structure to some more perspicuous (semantic) representation of the sentence. Generative semantics is then supposed to attempt to reverse this mapping, and to transform the (Katzian) semantic representation, perhaps via a deep structure, or perhaps more directly,

---

8 J.J Katz, Semantic Theory (New York, 1972), 397ff.; "Interpretative Semantics vs. Generative Semantics", Foundations of Language 6 (1970), 220-59; "Generative Semantics is Interpretive Semantics", Linguistic Inquiry 2 (1971), 313-31. N. Chomsky, "Deep Structure, Surface Structure and Semantic Interpretation", in Studies on Semantics in Generative Grammar (The Hague, 1972), 61-70. Vide Katz, Semantic Theory, xxiv: "the logical form of a sentence is identical with its meaning".

to the surface structure.

Indeed, we find that Lakoff, for example, presents a particular underlying phrase marker and claims that it has such and such a meaning - by providing a (surface) sentence.[9] How does he tell the connection between the underlying structure and the sentence he has given? What he has done is either to look to the transformational component which he is presupposing, and to use it to derive a surface sentence - the phrase marker analysing the sentence he gives. Or he has applied semantic rules, which themselves are derived from this presupposed transformational component, so that the sentence he gives is in fact the truth-condition, in a homophonic metalanguage, which we saw earlier arose from generalising the truth-value under each interpretation to a single statement encapsulating each particular. Indeed, to someone unfamiliar with the transformations Lakoff has in mind, the meaning to which Lakoff refers does not immediately leap to mind. Outside of the theory these underlying structures do not have any logical priority over others - though they may have, for various people for various reasons, psychological priority. The base component and the transformations belong together.

---

9 G. Lakoff, "On Generative Semantics", in D. Steinberg & L. Jakobovits (edd.), Semantics (Cambridge, 1971), 242-3; "Repartee" (see note 7), 403-4.

If a particular transformational component has been selected, then certain base structures will be needed as input to derive the desired surface sentence. If a particular base structure is taken, then only certain forms of transformational derivation are possible to arrive at the specified surface form. Jackendoff makes a mistake similar to Lakoff's: he presents two deep structure trees, and claims that "the difference between the underlying structures does not adequately characterise the semantic difference."[10] How can he tell this? - only by reference to the very restricted set of transformations which he recognises, that is, on syntactic, theoretical, grounds, are they deemed inadequate. This transformational component cannot by these input structures distinguish sentences which intuitively differ in meaning. Two remedies are possible: to find another pair of underlying structures, or, within the bounds of such constraints as Recoverability, to strengthen the transformational component appropriately.

8. Conclusion

Suppose we had a theory of truth for the sentences of our language. That is, we had an account of grammaticality, which firstly distinguished well-formed expressions

---

10 R. Jackendoff, "On Some Questionable Arguments about Quantifiers and Negation", Language 47 (1971), 286.

out of the class of all strings of primitive symbols; and which, secondly, assigned to those well-formed expressions a structural description from which the theory could derive its truth-conditions, that is, could assign to each such description a truth-value under an interpretation. Such a structural description could be called a logical form. For I take logical consequence to be semantic consequence. A is a logical consequence of Γ if and only if A is true under every interpretation under which every member of Γ is true. (Hence I do not follow Prawitz in wishing to take informal proof-theoretic consequence - defined in terms of canonical proofs - as primitive. Here, as later when I come to discuss Dummett's theory of meaning, I take a classical, realist, viewpoint, not an intuitionistic one. Earlier I justified taking 'and' as a logical constant proof-theoretically: there is an introduction-rule for it stateable entirely in terms of derivability. But what justifies that rule is the <u>truth</u>-condition for $\ulcorner$A and B$\urcorner$.) So that if, for any two sentences A and B one can find structural descriptions $\overline{A}$ and $\overline{B}$, and corresponding truth-conditions ϕ and ψ, then one can determine whether A and B fall in the relation of logical (that is, semantic) consequence.

But $\overline{A}$ and $\overline{B}$ are not immediate constituent analyses of A and B; rather, the grammar assigns to each sentence an underlying phrase marker, and provides a (transformational) derivation of A from $\overline{A}$. (Comparable to the

derivation of 3a/ from 3c/.) A transformational generative grammar gives us no effective procedure for finding the deep structure of a sentence, though whether a particular deep structure can be transformed into a given surface structure is decidable. We require meaning-invariance of the transformational component as a whole in the sense that no deep structure must be transformable into two non-synonymous sentences.

Davidson puts a constraint on his theory of truth which I find unacceptable. He requires that the truth-condition of a sentence s contain no semantic terms not already present in s itself.[11] The requirement is a version of Carnap's statement of the redundancy theory, which claimed that the meaning of ⌜s is true⌝ is identical with that of s. In a homophonic theory this does, misleadingly, occur. But even here it is in a sense a byproduct of the fact that the metalanguage contains the object-language. In general it is only by the use of Tarskian model theory, that is, the use of domains of interpretation with respect to which to define a truth-predicate on sentences, that the semantics can yield any insight into the inferential network of language. We begin to understand the logical structure of our language by analysing specific features such as reference,

---

11 D. Davidson, "Semantics for Natural Languages", in G. Harman (ed.), On Noam Chomsky (New York, 1974), 243-4.

quantification and predication. We do this by seeing how the assignment of elements of a domain to certain categories of (deep structural) expression, of assignments of extensions and intensions to certain sorts of predicate, and the analysis of quantifiers as second-level predicates (predicates of predicates), combine to yield truth-conditions for sentences via the syntactic relation between underlying structural descriptions (and their parts) and sentences (and their parts). If the truth-theory can produce such a condition as T_I ($\exists$ vA) if and only if $\exists$ I' $\underset{t}{\sim}$ I, T_I,(A [t/v]), and it contains the object language, and (what might anthropomorphically be expressed as) it understands the connection, then we may deduce in it: 'if V_I then T_I ($\exists$vA) if and only if $\exists$ vA', where 'V_I' expresses the assignment under I to the atomic subformulae of A. In particular, if '$V_{\underline{I}}$' is the assignment as things are (if $\underline{I}$ is the real world), and so true, we can detach the conclusion, and defining T(A) as $T_{\underline{I}}$(A), obtain T($\exists$vA) if and only if $\exists$vA.

Why the relativisation to an interpretation? Can we not require simply that the semantics give us the truth-conditions of sentences under the standard interpretation? No: such an atomic predicate as 'run' is not made to mean run by assigning it to the set of things which run. That would simply give us the truth-value of sentences under the standard interpretation. We do not require our semantics to tell us which sentences are

true and which false. Nor does the semantics tell us the meaning of the semantical primitives. It tells us how the meaning of semantical composites (such as sentences) depends on the meaning of the primitives. It tells us that <u>if</u> such and such are the things which run (for extensional predicates like 'run'), and if such and such a property of properties (and of properties and objects) is assigned to a predicate like 'worship' (an intensional one), and so on, then such and such sentences will be true. If other assignments are made, that is, if other things run, other so-described objects are worshipped, and so on, then other sentences will be true.

So the input to the semantics is the form (structural description) of a sentence as needed for the determination, by the truth-conditions, of its logical properties. Its structural description is its logical form.

Chapter Three: Quantification

1. Introduction

In the next chapter I will concentrate on referring expressions. Firstly, I wish to look at attributively occurring phrases. In the first chapter I argued that the latter are quantified expressions. So it is appropriate to look at the form of quantified expressions in general.

One of the main objections to one common use of first-order logic in the regimentation of natural language, typified by Quine, is its construing all noun-phrases as essentially quantified. If we do this we lose the atomic basis. We lose the referring expressions. All we can then say is that some predicate is instantiated, and state logical relations between such instantiations. The use of bound individual variables gives the illusion of mentioning objects. But such variables are apparent variables. The quantifier is a second-level predicate, ascribing the property of instantiation to the first-level predicate. If we have no names for objects (if they have all been eliminated in favour of quantifiers), then we have no way of applying these first-level predicates to objects. Hence such predicates cannot be used to distinguish such objects from one another, nor to

reidentify one as the same object on repeated occasions. The predicates then become descriptive of no more than features of the world (as Strawson called them[1]). So used, first-order logic is a feature-placing language in which there is no reference to particulars.

This problem constitutes perhaps no inherent objection to first-order logic. Given the atomic basis, requiring the use of truly referring expressions, that calculus may well give a correct account of the logical function of quantified expressions. It is the purpose of this chapter to examine this claim. It will not, however, be tackled directly. Rather, my procedure will be to start from the general identification made in the last chapter between logical form and the deep structures of some standard transformational generative grammar, and to work out what structures the rest of the latter theory requires of its quantificational items. We will find, in fact, that the Fregean structure recognising the quantifier as a second-level predicate is essentially correct. Each quantifier is dominated in deep structure by the node V, and its argument contains a sentential element, from which a term or nounphrase is distinguished. But we must find why it is correct.

---

1 P.F. Strawson, Individuals (London, 1959), 202. I owe the idea to I. Hacking, "A Language without Particulars", Mind 77 (1968), 171.

The V-node can be further spelt out in terms of semantic features. We have seen how the syntactic structure provides a recursive input to the semantic interpretation - and how the explanatory function is served by this connection between syntax and semantics at the level of deep structure within a theory which generates precisely the grammatical sentences and assigns to them under each interpretation the right truth-value. Such quantificational features might be called syntactic because they will have a place in triggering certain transformations, that is, in producing the syntactically correct form. In the same way, the negative morpheme might be called syntactic because of its use in such transformations as the comparative and 'neg'-raising, and a feature such as 'male' similarly, because of its use in agreement transformations. But such particles also have an obviously central use in the interpretation. Their possession of both aspects emphasises the close connection between syntax and semantics which has recently been endowed with the title "Fregean".

2. An Application of the Frege Argument

The starting-point of our search for the deep structure of quantification is the observation of Frege's which I have called attention to before. It played a large part in his own theory of reference and

quantification. I shall call it the Frege argument or the negation argument. It is one reason for Frege's rejection of the traditional subject-predicate distinction of traditional logic. In the case of singular judgments, Frege's division of the judgment into function and argument follows the traditional division. For he admits that the function-expression may itself contain an object-expression, as for example when taking the sentence

1/ John loves Mary

to refer to the result of applying the function

<u>ζ loves Mary</u> to the argument John. So he does not follow Peirce in taking each object-expression necessarily as a subject, and the predicate (or function)-expression as the remaining relational part. Each singular judgment is divided, though sometimes this is possible in many different ways, into argument and function. The traditional account, however, also analysed

2/ Every man loves Mary

into subject ('every man') and predicate ('loves Mary'). This, Frege argued, is wrong. 'Every man' is not here, or anywhere, the logical subject. For a singular judgment, the central case of the subject-predicate distinction, is denied by denying the predicate. The contradictory of 1/ is

3/ John does not love Mary.

However, we cannot form the denial of 2/ in this way.

Its contradictory is not

4/ Every man does not love Mary,

but 5/ Not every man loves Mary.

Frege's point expresses the fact that the negative is here attached to the quantifier.

> "In consequence it would be best completely to ban the words 'subject' and 'predicate' from logic, since again and again they lead us to confuse two fundamentally different relationships, that of the falling of an object under a concept, and that of the subordination of one concept to another. The words 'all' and 'some', which attach to the grammatical subject, belong according to the sense to the grammatical predicate, as is clear if one looks at negation."[2]

Words like 'every' "must be counted in with the predicative part of the sentence."[3] 'Every man' does not constitute the (logical) subject of sentence 2/.

---

2 G. Frege, "Ausführungen über Sinn und Bedeutung", in H. Hermes, F. Kambartel & F. Kaulbach (edd.), Nachgelassene Schriften (Hamburg, 1969), 130.

3 G. Frege, "A Critical Elucidation of Some Points in E. Schroeder's Vorlesungen ueber die Algebra der Logik", trans. in P. Geach & M. Black, Philosophical Writings of Gottlob Frege (Oxford, 1966), 93 n.

We have seen this argument arise earlier. We then used it to distinguish quantified occurrences of certain expressions from referring ones. Our purpose here is different: further to use it to find the deep structure of quantification. Because of the way the semantic interpretation will operate on deep structure, any node dominated by 'NP' in deep structure expresses a logical subject. So such expressions as 'every man' will not constitute a subtree dominated by 'NP' in the deep structure, as they do in the surface structure.

The semantics follows the inductively framed phrase structure rules. Suppose the transformational component has a single rule of 'neg'-placement as follows:

$$X \quad [_S\, [_V \text{neg}\,] \quad [_{NP}\, [_S\, [_V Y\,] \quad Z\,]\,]\,]W$$

$$\begin{array}{cccccc} & 1 & & 2 & 3 & 4 & 5 \\ \Rightarrow & 1 & & \emptyset & 2+3 & 4 & 5 \end{array}$$

Here the square brackets with syntactic categories appended indicate the structural tree (phrase marker) dominating the string. The figures show how the tree is altered by the transformation. The element 'neg' is Chomsky-adjoined to the V(erb) to give $[_V\, [_V \text{neg}\,]\, [_V Y\,]]$. Given this single negation transformation, we must state universally in the semantics that: Val $([_S\, [_V \text{neg}\,][_{NP}\, [_S X\,]\,])$ = t if and only if Val $([_S X\,])$ = f. For the relation between the truth-theory and both the deep structure and the transformational component is that the rules of semantic composition depend uniformly on the transformational

rules of syntax - that is, the same rule applies (if it can) to each deep structure input. This is the manifestation of meaning-invariance once we have rid ourselves of mentalism.

If we do have such a 'neg'-placement rule we are immediately forced to treat quantifiers as "higher verbs". That is, a quantifier is dominated by the node V in deep structure, and that V-node commands (and is not commanded by) the NP-node related as ancestral to the noun the quantifier modifies in the surface structure. (A node A commands a node B if 1) neither A nor B dominates the other, and 2) the S-node which most immediately dominates A also dominates B.) Since, as we saw, 2/ is false if and only if 5/ is true, the negation must be attached to the quantifier, not to the (apparent) main verb, 'loves'. So the deep structure of all sentences of the form 'Every A is B' is

$$6/ \quad [_S\ [_V \text{every}\ ]\ [_{NP}\ Y\ ]\ ],$$

where the quantifier appears as a "higher verb", and the internal structure of Y has yet to be worked out.

3. The Complex NP Structure

The Complex NP structure $[_{NP} NP\ \ S\ ]$ was first introduced by Katz and Postal, and elaborated by Chomsky,[4]

---

4 J.J. Katz & P.M. Postal, An Integrated Theory of Linguistic Descriptions (Cambridge, Mass., 1964), 67;

to replace the generalised transformation for restrictive relative clauses. Such a substructure presents a sentence together with a distinguished NP from the sentence, which acts as a head noun. The rule of relative clause formation is then stated (roughly) as:

	X	$[_{NP}NP_i$	$[_S$ Y	NP_i	Z]]	W
	1	2	3	4	5	6
$\Rightarrow$	1	2	wh-+3	$\emptyset$	5	6

(The use of "syntactic indices" on the NP-nodes here will be explained and justified below in the context of pronominalisation). The semantics will then assign to the head noun (the first occurrence of NP_i - it is a common noun) those elements of its extension which satisfy the open sentence 'Y ... Z'.

Such a restrictive interpretation is required in the present setting for the analysis of quantifiers. We predicate, in sentence 2/ for example, universality ('every') of just those men who love Mary, or of the concept <u>if ζ is a man then ζ loves Mary</u> (the latter being a Fregean way of expressing it - see the article cited in n. 2). So 6/ can be more fully specified as

6'/ $[_S [_V \text{every}] [_{NP} [_{NP} \text{man}_1] [_S \text{man}_1 \text{ love Mary}]]]$.

Of course, in general such quantifiers cannot be treated as predicates in overt surface structure. And, as has

---

N. Chomsky, <u>Aspects of the Theory of Syntax</u> (Cambridge, Mass., 1965), Ch. 3.

frequently been observed, some of them can, if somewhat archaically. We can say, 'Those who came were many', 'The audience was numerous', 'Tadpoles with genetic defects are few'. If it is asked what, for example, 'The boys who came (were) all' could possibly mean, we can answer as in the last chapter: we do not assign a meaning to a deep structure intuitively. Either we can see what such a form must mean by seeing to what surface form it is transformationally related - viz. 'All the boys came'; so that questions of meaning depend not only on the phrase structure generation of the base, but also globally on what transformations are used. Or we can look to see what truth-condition is assigned to such a deep structure by the semantics. These two means are, of course, essentially the same, given the dependence of semantics on syntactic description.

In general the structure underlying a quantified expression 'Q N' is

$$7/ \quad [_S\ [_V{}^Q\ ]\ [_{NP}\ [_{NP}{}^W\ ]\ [_S{}^X\ \ Y\ \ Z\ ]\ ]\ ],$$

where each of W and Y is either N_i (with syntactic index i), or another complex NP headed by N_i. We can then draw from Guy Carden[5] his rule of quantifier

---

5 G. Carden, "English Quantifiers", in Aiken Computation Laboratory Report NSF-20 (Harvard, 1968), ed. S. Kuno, §§ IX, 10. The higher verb analysis of quantifiers stems from G. Lakoff, Irregularity in Syntax (New York, (1965/

lowering (or Q-magic) in order to realise the quantifier as a modifier of a noun, the whole being a nounphrase:

$$W\ [_S\ [_V Q]\ [_{NP} NP^1\ \ [_S X\ \ NP^2\ \ Y]]]\ Z$$

$$1 \qquad 2 \qquad 3 \qquad 4 \quad 5 \quad 6 \qquad 7$$

$$\Rightarrow \quad 1 \qquad \emptyset \qquad \emptyset \qquad 4 \quad 2+5 \quad 6 \qquad 7$$

where, for some i (syntactic index), for each n = 1,2, NP^n either is simply NP_i itself, or dominates NP_i.

This is clearly a very strong transformation, which removes a whole S from the phrase marker. The power of the rule is perhaps greater than that initially envisaged in transformational generative grammar (though not than that of Harris's transformations). Similarly powerful rules are needed also in Ross's analysis of auxiliaries as "main verbs" (that is, higher verbs),[6] and in the performative analysis. I proposed such a strong rule also in 'neg'-incorporation earlier.

4. The Complex NP Constraint

The rule also introduces material into the S of a complex NP. Does Q-magic therefore violate Ross's Complex NP Constraint?[7] As originally formulated, that

---

1970), Appendix F.

6 J.R. Ross, "Auxiliaries as Main Verbs", in W. Todd (ed.), Studies in Philosophical Linguistics I (Evanstown, 1969).

7 J.R. Ross, Constraints on Variables in Syntax (Ph.D.,

rule does permit the insertion of material. It states: "No element contained in a sentence dominated by a noun-phrase with a lexical head noun may be moved out of that nounphrase by a transformation" (my italics). However, it has later come to be seen as a rule isolating the complex NP in every way. The evidence does not warrant this. It shows simply that one cannot further relativise or question material which already lies in a relative clause. So, for example, we cannot use the sentence

8/ The boy who kissed the girl was bald

to modify the noun 'girl'. In other words, such an expression as

9/* The girl whom the boy who kissed was bald was pretty

is ungrammatical. We can see in fact how the difference between moving material in and out allows double quantification but prevents double relativisation. Consider, for example,

10/ Every man loves a woman.

Under questioning, or under denial, we find that the quantifier 'every' is the one which attracts the negative or doubt. Its contradictory is

11/ Not every man loves a woman.

Whereas 12/ A woman is loved by every man

M.I.T., 1967), 70; in G. Harman (ed.), On Noam Chomsky (New York, 1974), 178.

is ambiguous. Used in one way, 12/ is synonymous with 10/, but it can also be used differently. So used its contradictory is

13/ No woman is loved by every man.

It follows that, as before, we must treat that quantifier which attracts the negative as the higher verb. We obtain, for 10/,

14/ $[_S\ [_V$every $]\ [_{NP}\ [_{NP}$man $]$
$[_{S^1}$ man loves a woman $]]]$,

and S^1 here is further to be analysed as

15/ $[_{S^1}\ [_V$ a $]\ [_{NP}\ [_{NP}$woman $]$
$[_S$man love woman $]]]$.

Similarly, 12/, on the reading not synonymous with 10/, has analysis

16/ $[_S\ [_V$a $][_{NP}\ [_{NP}$woman $][_S\ [_V$every $][_{NP}\ [_{NP}$man $]$
$[_S\ [_V$love $][_{NP}$ man $][_{NP}$woman $]]]]]]$.

It is interesting that the following structure, with this sort of double embedding, but with the quantifiers replaced by ordinary predicates, is blocked by the transformational component:

17/ $[_S\ [_V$be bald $][_{NP}\ [_{NP}$boy $][_S\ [_V$be pretty $]$
$[_{NP}\ [_{NP}$girl $]\ [_{S^3}\ [_V$love $][_{NP}$boy $]\ [_{NP}$girl $]]]]]]$.

If it were not blocked,

18/* The boy the girl whom who loves
is pretty is bald

could be a grammatical sentence. The constraint preventing it is the Complex NP Constraint. Once one of 'boy' and 'girl' has been relativised from S^3, that

is, moved <u>out</u>, the other no longer can be.

5. The Quantifier as a Second-Level Predicate

Does this transformational account of quantification conflict with the sort of structure proposed in first-order logic? What is the connection between 7/ and

19/ $(Qv)A$,

for some quantifier $Q = \forall, \exists$? In what way can '$\forall$' or '$\exists$' be said to be a higher verb? Ajdukiewicz argued that it is not possible to treat quantifiers as predicates (that is, functors with sentential values).[8] Following the formation rules slavishly, $\ulcorner \forall v \urcorner$ appears to be a functor on open sentences. What sort of functor would $\ulcorner \forall v \urcorner$ be? It cannot be an extensional truth-functor of its argument A, that is, as s/s functor in an extensional logic, for it clearly corresponds to none of the four of these. Perhaps '$\forall$' is a functor of two arguments, v and A. By considering quantification over propositions, Ajdukiewicz shows this to be impossible too. He concluded that the quantifiers cannot belong to a functor category, in Leśniewski's sense of semantic categories. He therefore introduced a new notion, that of an operator, to which he assigned a new (dashed) kind of index, and a new rule of index derivation. Operators

---

8 K. Ajdukiewicz, "Syntactic Connexion", in S. McCall (ed. & tr.), <u>Polish Logic 1920-39</u> (Oxford, 1967), 220-31.

are distinguished from functors in being capable of binding variables. $\ulcorner \forall v \urcorner$ is a universal operator, with index $\left| \frac{s}{s} \right.$. To do this is to be misled by the usual notation, and the usual way of giving the formation rules, of first-order logic. As Ajdukiewicz saw in § III, the variable can be bound before the quantifier is applied - it is not the quantifier which does the binding. Then the quantifier operates on a propositional function - a first-level predicate. We find Church and Fitch formulating quantified expressions in this more revealing way. Church first constructs the abstract $\ulcorner \lambda v A \urcorner$: ' λ ' is a two-place operator taking a variable and an open sentence, and binding that variable in that sentence. $\ulcorner \lambda v A \urcorner$ is interpreted as a function (or predicate). We can then form $\ulcorner \Pi (\lambda v A) \urcorner$, in which we predicate universality of this predicate. We assert that it is true whatever it is applied to. Church defines: $\forall v A =_{df} \Pi (\lambda v A)$. [9]

Ajdukiewicz resists this, on the ground that the universal functor ' Π ' can be defined only in terms of the universal operator $\ulcorner (\forall v) \urcorner$. However, he has here confused part of the definition of truth in the semantics with a (syntactic) definitional abbreviation. We require in the recursive definition of truth for expressions of

---

9 A. Church, "A Formulation of the Simple Theory of Types", Journal of Symbolic Logic 5 (1940), 58.

category s (Church's type o) that the atomic assignment Φ be extended to all expressions in such a way that, under the extension V_Φ ,

> "V_Φ ($\Pi_{o(o\alpha)}$) be the function which has the value T just for the single argument which is the function mapping D_α into the constant value T,"[10]

or, as Ajdukiewicz puts it,

> "Π(f) is satisfied by all and only those s/n functors (in the place of 'f') which form a <u>true</u> proposition with every name" (<u>op. cit.</u>, 230).

This is not to <u>define</u> Π in terms of the universal operator $\ulcorner \forall v \urcorner$. The universal operators 'every' (over names) in Ajdukiewicz's account, and 'mapping D_α into T' - that is, mapping <u>every</u> member of D_α into T - in Henkin's, are in the metalanguage.

This still leaves ' λ ' (Ajdukiewicz's circumflex operator) as a variable-binding symbol which cannot be identified as any functor. Church and Henkin treat ' λ ' as an improper symbol together with the parentheses, and define it implicitly by the rules of λ -conversion. Being an improper symbol, it is given no assignment in the semantics - it is an incomplete symbol. Ajdukiewicz makes a similar move in defining the circumflex operator

---

10 L. Henkin, "Completeness in the Theory of Types", <u>Journal of Symbolic Logic</u> 15 (1950), 84.

by "$(\hat{x}).fx:x.:\equiv.fx$", that is, more generally, $(\hat{v}).A:u.:\equiv .A[u/v]$. Any proper symbol - that is, one with a type or semantic category, would needs be assigned a functional value in the semantics. ' λ ' looks as if it has type $\alpha\beta\alpha\beta$. But there is no such (language-independent) function to assign to it. ' λ ' operates syntactically; the value of $\ulcorner \lambda\, vA \urcorner$ does not depend (only) on the <u>value</u> of A, but on the form of the expression itself.

Thus the structure properly analysing 19/ is

20/ $\quad [_S\, [_V Q\,]\, [_{NP}\, [_{NP} x\,]\, [_S A\,]\,]\,]$,

or Q(A) if we know which free place(s) in A the quantifier governs.

Fitch firstly defines the abstract $\ulcorner (n \backslash B) \urcorner$, and then forms the universal predication of it: $\ulcorner A\ (n \backslash B) \urcorner$.[11] Indeed, for Fitch 'n' can be lexically specified, as in 7/ the head noun can be, whereas in Church's formal language only variables can be bound. Abstraction here is the same as relativisation via a head noun in our analysis. A quantifier is a verb which takes a predicate as argument. In other words, it is a second-level predicate, as Frege noted. Similarly, in the traditional notation of syllogistic, 'a' in 'SaP' can be treated as a predicate of the pair $< S,P >$.

6. <u>Syntactic Indexing</u>

I want to turn now to consider the matter of

---

11 F. Fitch, <u>Symbolic Logic</u> (New York, 1952), 128, 132.

coreference in deep structures. We occasionally find authors speaking of such notions as "the referential identity of two deep structure occurrences of 'few rules'"; or making such a claim as that "'everyone' always denotes the same set."[12] Lakoff says: "Expressions such as 'men_i' are to be understood as the variable i limited to the domain of men."[13] I would argue that we do not need to talk of coreferentiality between quantified phrases. Indeed, the very notion is devoid of sense. But we do need to mark the head noun of a complex NP in some way, to indicate which item (of several which may be formally identical) in its S is to be relativised. Consider the complex NP

21/ $[_{NP}\ [_{NP}{}^{man}]\ [_{S}{}^{1}$ man hit man $]]$.

What we require is <u>syntactic indexing</u>. We need to mark one occurrence of 'man' in S^1 as that to be used in the WH-fronting or the Q-magic to ensue. If we left it as optional which occurrence was selected by the transformation, we would lose meaning-invariance. Two non-

---

12 B.H. Partee, "Negation, Conjunction and Quantifiers: Syntax v. Semantics", <u>Foundations of Language</u> 6 (1970), 155. R. Jackendoff, "Quantifiers in English", <u>Foundations of Language</u> 4 (1968), 433.

13 G. Lakoff, "On Generative Semantics", in D. Steinberg & L. Jakobovits (edd.), <u>Semantics</u> (Cambridge, 1973), 238 n.6.

synonymous surface structures would be generable by a single deep structure. A single deep structure could not then be sole input to the semantics. In the same way, Katz and Postal introduced a question morpheme and a negation morpheme into deep structures to trigger the appropriate transformations. So a sentence and its contradictory, and an indicative sentence and its corresponding interrogative, have different underlying structures.

But there is more to syntactic indexing than its triggering the appropriate transformations. It is this further application which gains it the (misleading) title "coreferentiality". For the deep structure acts as a canonical input to the semantics. What then we require of the interpretation is that it assign the same element of the domain to those formally identical items with the same index. So that in 21/, for example, it assigns the member of the set corresponding to the common noun 'man' to each occurrence of 'man' with the same index. This is what is meant by saying that the relative clause structure (complex NP) restricts the interpretation of its head noun to those of its denotata of which the adjoined sentence is true. That is a gauche way of requiring that coindexed items be assigned the same item by the atomic clauses of the interpretation, and that a semantic rule of composition assign truth-values on that basis. Compare the use of variables in first-order logic. Take for example

22/ $\exists x_1 \quad \forall x_2 \ (Fx_1x_2 \supset Gx_1x_1)$.

In building up the interpretation and truth-assignments, each argument-place of the function G must be assigned the same item, and the same item as is assigned to the first argument-place of F. It is clearest if we give the recursive clauses in terms of sequences. If $\underline{s}$ is the sequence $< a,b, \ldots >$, then $\underline{s} \models Fx_1x_2 \supset Gx_1x_1$ if and only if either $< a,b > \notin \overline{F}$, or $< a,a > \in \overline{G}$.

So with our deep structures. Let T be the phrase marker

$$[_S [_V \text{be wise}] [_{NP} [_{NP} \text{man}_1] [_S [_V \text{love}] [_{NP} \text{man}_1] [_{NP} \text{Mary}]]]] ,$$

and $\underline{s}$ our earlier sequence. Then $\underline{s} \models$ T if and only if a is wise and a loves Mary. This does not, of course, give the truth-condition of

23/ The man who loves Mary is wise.

If we reflect on our previous remarks about sentences with descriptions, we will realise that in T we have but part of the structure underlying an attributive use of the description in 23/. The phrase is in fact a quantified phrase, and the full analysis is:

T': $[_S [_V \exists] [_{NP} [_{NP} \text{man}_1] [_S [_V \text{be wise}] [_{NP} [_{NP} \text{man}_1] [_S \text{man}_1 \text{ love Mary}]]]]]$.

Let $\underline{s}'$ be any sequence, and suppose that $\underline{s} \models$ T. Now $\underline{s}' \models$ T' if and only if there is some sequence $\underline{t}$ such that $\underline{t} \models$ T. Since $\underline{s} \models$ T, it follows that every

sequence s' $\models$ T'. That is, there is some man who is both wise and loves Mary, That, we saw earlier, is indeed the truth-condition of 23/ with an attributive use of the definite description.

7. Conclusion

I have isolated a particular deep structural form as that underlying quantified expressions, and have sketched the sorts of transformational rules required and the consequent semantic interpretation by which the analysis is to be understood. I have shown how "coreferentiality" applies to expressions indexed by syntactic indices, and how these can be introduced, and in what ways the term is a misnomer. I will consider the rather different structure underlying referentially used phrases in the next chapter.

Chapter Four: The Structural Description

1. Indefinite Descriptions

In proceeding towards a structural analysis of the occurrences of referential phrases, it is useful to consider some similarities between definite and indefinite descriptions. When Quine extended his consideration of purely referential and other occurrences from the question of substitution for definite singular terms to related questions for indefinite singular terms, he emphasised that what had been shown to be referential or not was not simply the occurrences of a term, but the position it occupied. Either all terms occurring in that position were referential or none were. This was required by his search for regimentation. In looking for a distinctive logical form for reference, I need to show how the general structure underlying a referential use contains a position which explains referential occurrences of terms in that position in a uniform manner.

The connection between definite and indefinite nounphrases is shown by the occurrence of pronouns with indefinite nounphrases as antecedent. There are strong co-occurrence relations between pronouns and definite descriptions - indeed, some have argued on the basis of

this co-occurrence for definite descriptions as a deep structure source for (at least some) pronouns. Following

1/ John wants to buy the best car,

we can speak of

1a/ the car John wants to buy,

or 1b/ the car John buys (if he buys one),

and occurrences of such definite descriptions co-occur with pronouns. Following 1/, we can say: "He is searching all over for it". The definite phrases 1a/ and 1b/ characterise different interpretations of the definite description 'the best car' in 1/. Are these different interpretations those we have labelled the referential and attributive uses of such descriptions? Implicit in the tense of 1b/ is the phrase 'whichever one he buys'. So the use of 1b/ requires an attributive use of the description in 1/. This is not to say that 1b/ can never be used referentially. What forces an attributive interpretation here is the presence of the parenthesis (whether explicit or not), where the expression 'one' indicates a quantifier. So that the non-continuous present cannot here represent a habitual action of John's directed repeatedly towards the same car (which 'buys' also makes unlikely - 'paints' might not).

But use of 1a/ leaves the possibilities for interpretation open. 1a/ can be used (here) either referentially or attributively. However, an attributive use

of 1a/ can only be about the kind of car John wants to buy, as 'Smith's murderer' so used can only be about the kind of person who would do the deed. In this case it would be natural to proceed to talk of the (sort of) car John will buy (if he buys one), and the future "tense" here will often be elided. So an attributive use of 'the best car' in 1/ will commonly be followed by 1b/. Hence, although the picture is perhaps more complicated below the surface, the referential/attributive contrast in the use of the description in 1/ will often be revealed by the use of 1a/ or 1b/ to follow it.

Just as 1a/ and 1b/ can follow 1/, they can also be used to follow

2/ John wants to buy a good car.

When used with 2/, the contrast they mark is often called the "specific/non-specific" distinction. If we consider 1a/ and 1b/ from the point of view of their being used referentially or attributively following 2/, we can tie these notions together. Once again, 1b/ can only be used attributively here. It again carries the parenthesis 'if he buys one'. An attributive use of 1a/ is similarly naturally contracted into 'the car he will buy', and 1a/ itself will normally be used referentially here, and indicate a specific use of 'a good car'. The specific/non-specific distinction contrasts 1a/ used referentially to follow 2/ with the (necessarily attributive) use of 1b/.

We can, therefore, generalise the referential/

attributive distinction, and apply it to such indefinite nounphrases as 'a good car' in 2/.

2. The Attributive/Appositive Distinction

Such cases as 1/ and 2/ with embedded clauses are useful in emphasising the ambiguity of use we are looking at. But they can also be misleading. We noted in the first chapter how the demand for 'WURFS to GLIP' analyses arose. Similarly, here with indefinites there is a temptation to suppose that "lopping the matrix" characterises the non-specific use, while retaining it captures the specific, as suggested by Janet Dean.[1] That is, 1a/ retains the matrix 'wants to', and is specific, whereas 1b/ "lops" it, and is non-specific. That explanation cannot, however, deal with the ambiguity when it arises, as it can, in sentences without embedded clauses. The referential/attributive contrast is always available. In certain cases, notably in the use of direct objects of verbs that require an animate subject, it is particularly heightened. This class might just conceivably allow regimentation into propositional attitudes. But the ambiguity does also affect subject position. We may exclaim: "The biggest idiot in the

---

1 J. Dean, "Nonspecific Noun Phrases in English", in Aiken Computation Laboratory Report NSF-20 ed. S. Kuno (Harvard, 1968), § VII.

country asked God to help him", applying the description simply for the reason that we feel it idiotic to expect help from God; or we might apply the epithet for some other reason, as a pragmatic means of identification. Or we may muse: "The philosophical Greeks were also logicians", where we may be speaking of any philosophical Greeks; or we may be referring to the whole race, whom we have already seen reason to suppose great in philosophy.

Just such examples were taken by Bach to reveal a structural ambiguity in the analysis of nounphrases.[2] Adjectives have frequently been recognised to exhibit an ambiguity between being attributive, and so linked to a restrictive clause, and being appositive, and linked to an appositive, or non-restrictive, relative clause. The distinction can also be applied to the whole nounphrase itself. When we fix our hearer's attention on a particular item or items, we pursue the manner of speech where we add incidental information about an already identified object. Our uncertainty in assenting to a sentence with a mistaken appositive clause, for example,

Fred, who's the new Professor of Greek,

---

2 E. Bach, "Nouns and Noun Phrases", in E. Bach & R.T. Harms (edd.), Universals in Linguistic Theory (New York, 1968), 93-5.

is speaking tonight,

(if he's actually in German), exactly matches our hesitancy about

The new Professor of Greek is speaking tonight.

When we speak only of whatever or whoever can be so characterised we parallel the use of such a restrictive clause.

3. Appositive Clauses

Appositive clauses are to be analysed as conjunctions, though ones whose conjuncts have unequal importance for the truth-condition. That conjunction, as a source of such clauses, cannot be embedded. This last point is the reason why appositive clauses, and the description constituting referentially used nounphrases, carry the speaker's endorsement. They cannot be subsumed under someone else's report. We might therefore speak of two assertions, rather than the single assertion of a conjunction.

The reasons are these. Non-restrictive clauses are usually marked in written English by insulating them with commas, as a subordinate clause (pauses are used in spoken English). They can attach to any nounphrase, including proper names, whereas restrictive relative clauses cannot:

3a/ John, who is an Italian, opted for a Fiat

3b/ *John who is an Italian opted for a Fiat.

The truth-conditions of 3a/ are very close to those of

4a/ John opted for a Fiat; he is an Italian.

Other ways of expressing it are

4b/ John opted for a Fiat and (incidentally) he is an Italian

4c/ (Incidentally) John is an Italian and (so) he opted for a Fiat.

4c/ captures the common use of an appositive clause to give an explanation for the main assertion. So if we wish to find a canonical form using elements which we already understand, it is useful to replace sentences with non-restrictive clauses by conjunctions, with some indication (here given by the expression 'incidentally') that the additional characterisation does not have equal importance with the main clause or main assertion.

Suppose now that we embed 3a/ in a report:

5/ Fred remarked that John, who is an Italian, had opted for a Fiat.

The truth-condition for 5/ is given by

6a/ Fred remarked that John had opted for a Fiat, and (incidentally) John is an Italian

and 6b/ (Incidentally) John is an Italian, and so, Fred remarked, he opted for a Fiat.

Note that the incidental information, and the explanatory 'so' behaving in 6b/ as it did in 4c/, are given by the speaker, not by Fred. This is emphasised when we embed 3a/ twice:

7/ Bill wondered why Fred had remarked that John, who is an Italian, had opted for a Fiat.

This may be explicated as

8a/ Bill wondered why Fred had remarked that John had opted for a Fiat; John is an Italian,

or 8b/ (Incidentally) John is an Italian and (so) Bill wondered why Fred had remarked that John had opted for a Fiat.

4. An Application

Let us apply these findings to a case from the literature. McCawley drew a distinction between two readings, which he called *de re* and *de dicto*, of:

9/ Tom said he had seen the woman who lives at 219 Main St.,

by contrasting the possible continuations:

9a/ ... but the woman he saw really lives on Pine St.,

and 9b/ ... but he doesn't know that she lives there.[3]

---

3 J.D. McCawley, "Where do Noun Phrases Come From?",

Subsequently, Donnellan's distinction was used by Bell in his examination of referential opacity.[4] Though his syntactic account of the distinction, and his use of it to explain opacity are welcome, his analysis differs considerable in detail from that developed here. In the course of his account, Bell considered McCawley's example. Bell refused to treat 9a/ as opaque. He maintained that both 9a/ and 9b/ exhibit referential uses of the phrase 'the woman who lives at 219 Main St.' What distinguishes them, he said, is the level at which the non-restrictive analysans of the referentially used nounphrase is embedded. If the above claim that such referential material cannot be embedded is correct, there must be a different account.

Recall the differences and conflations I elaborated earlier between the various anaphoric uses of definite descriptions to pick up a previous description. 9/ exhibits the same confusion between contractions of an (appositive) clause simply for stylistic reasons and contractions in accordance with the matrix-lopping we

---

in R. Jacobs & P. Rosenbaum, Readings in English Transformational Grammar (Waltham, Mass., 1970), 166-83.

4 J.M. Bell, "Referential Opacity and Deep Structure", York Papers in Linguistics 2 (1972), 7-32; "What is Referential Opacity?" Journal of Philosophical Logic 2 (1973), 155-80.

noted in that discussion. That lopping was a test for distinguishing the specific and non-specific (and so transparent and opaque) readings. Consider the following sentences:

> 9c/ Tom said that he had seen the woman who lives at 219 Main St., but the woman he said he saw really lives on Pine St.
>
> 10/ Tom wanted to buy the car for sale at 219 Main St.,
>
> 10a/ ... but the car he bought came in the end from Pine St.
>
> 10c/ ... but the car he wanted to buy is actually in Pine St.

10a/ and 10c/ parallel 9a/ and 9c/. In 9b/ we have a clear case of transparent and referential use of the relevant nounphrase. The description is provided by the speaker. But in 9a/ we have a test case for the present account which presents the referential/attributive distinction, with its attendant possibilities for misdescription and speaker's endorsement for one pole, as a solution to these opacity problems. Bell's claim that 9a/ marks a referential use, but one different from that of 9b/ trades on an equivocation between 9a/ and 9c/. For 9a/ is ambiguous between i) a matrix-lopped continuation, that is, an attributive use, and ii) a contraction of 9c/ where the speaker is incorporating

his acknowledgement of the fact that Tom did see someone, whom he characterised (wrongly) as 'the woman who lives at 219 Main St.,' and whom the speaker then properly identifies. This then marks a referential use, as does 9c/ itself.

So when there is a referential use, the phrase used for identification, even when it originated with someone spoken about, and even though it may be believed by the speaker to be an inaccurate or false description of the intended referent, nonetheless acquires the speaker's endorsement; an endorsement which he can cancel. It is the speaker's means of identification, and so may be replaced by any other phrase he thinks fit. In 9b/ and 9c/ the non-restrictive clause as source cannot be understood to fall essentially under Tom's report. If it did, the occurrence would not be referential. There is no choice of level at which the purely referential material may be placed.

As a first approximation we can give as logical analyses of 9/ the deep structure phrase markers:

11a/ the attributive use - 9a/ i):

$[_S [_V \exists][_{NP} [_{NP}\text{woman}_1][_S\text{Tom said [he had seen } [_{NP} [_{NP}\text{woman}_1][_S\text{woman}_1 \text{ lives at 219 Main St.]]]]]]$

11b/ the referential use - 9a/ ii), 9b/, 9c/:

$[_{S\&} [_{NP} [_S\text{Tom said [he had seen } [_{NP}\text{woman}_1]]]]$
$[_{NP} [_S\text{woman}_1 \text{ lives at 219 Main St.]]]}$.

5. The Definite/Indefinite Distinction

There is one feature of this matter which may have a claim to being treated solely pragmatically. That is the distinction between the definite and indefinite articles. For the difference here lies not in the actual uniqueness of the description, but in a presupposition and belief on the part of the speaker that the description used picks out some item uniquely - that it is an identifying description. This is true of a referential use. We saw in the first chapter that such a use has a pragmatic presupposition that what was referred to fitted the description F. So any commitment to uniqueness of description is to be spelt out in terms of the beliefs of the speaker at the time of utterance. Our choice of article will depend on our beliefs about the breadth of application of the descriptive clause. If this is indeed so, then 11b/ also gives the logical form of 'Tom said that he had seen a woman who lives at 219 Main St.', with a referential use of the nounphrase, and we can continue to refer to that woman if (and only if) we used 11b/. Once again, the Russellian analysis, explicitly requiring uniqueness in the truth-condition, fits the attributive use.

6. The Contrast in Deep Structure

My aim was to give a general characterisation of the logical form of referring expressions, and to show

how and under what conditions substitution under identity is permissible. The first task is done by contrasting the (quasi-)conjunctive form of the referential use with the embedded and quantified form of the attributive use. Given a sentence A with a distinguished occurrence of the nounphrase s (let us write this as A(s)), we have for the quantified form:

$$12a/ \quad [\ Q\ [\ s_1\ [\ A(s_1)\ ]\ ]\ ]\ ,$$

and for the truly referential form:

$$12b/ \quad [\ A(he_1)\ ]\ \&\ [\ he_1\ be\ s\ ]\ .$$

To explain the use of 'he' in 12b/, recall the use of a non-restrictive relative clause to paraphrase the referential use of 'the biggest idiot'. We will say, perhaps, "He, who (incidentally) is the biggest idiot in the country, asked God to help him". In so doing, we use a deictic (or demonstrative) pronoun, and, if its referent cannot be identified solely from the context (up until its utterance), we add to that context some extra descriptive information. If s is a phrase such as 'the man at the beach', then the clause $\ulcorner [\ he_1\ be\ s\ ] \urcorner$ in 12b/ can be detailed as $\ulcorner [\ he_1\ be\ man\ ]\ \&\ [\ he_1\ be\ at\ the\ beach\ ] \urcorner$. If s is a proper name n, the clause will be $\ulcorner [\ he_1 = n\ ] \urcorner$. This identity sign is also needed to represent the identity clauses in any substitution. Not surprisingly, we require:

Val (X = Y) = t if and only if Val (X) = Val (Y), i.e. if and only if X and Y are assigned to the same element of the domain. Correspondingly, transformations

allow us to remove occurrences of '=' by substitution. Otherwise it is realised in surface structure as the copula. So '=' is an abstract formative occurring only in deep and intermediate phrase markers, and in the metalanguage. Such a treatment of identity suggests a claim about identity statements in general which I will discuss in the next chapter: that a so-called identity statement is simply one with referential occurrences of nounphrases on each side of the copula. (This naturally leads one to ask what results from attributive uses in conjunction with the copula.)

Then such an identity statement as 'Mary Wilson is the woman who lives at 219 Main St.', of the form 'n is s', where n is a proper name, has the deep structure form:

$$[\text{ Mary Wilson} = \text{she}_1\ ] \ \& \ [\ \text{she}_1 \text{ be woman }] \ \& \ [\ \text{she}_1 \text{ live at 219 Main St. }] .$$

Consequently, the argument allowing substitution in the referential case is:

$$\begin{array}{l} [\ A\ (\text{he}_1)\ ] \ \& \ [\ \text{he}_1 \text{ be s }] \\ \underline{\text{and } [\ n = \text{he}_1\ ] \ \& \ [\ \text{he}_1 \text{ be s }]} \\ \text{therefore, } \quad [\ A(n)\ ] . \end{array}$$

As we would by now expect, the description s is irrelevant to the validity of the argument. The situation is not much more complex should the identity statement contain two (referentially) used descriptions:

$$\frac{[\,A\,(he_1)\,]\ \&\ [\,he_1\ be\ s\,]\qquad and\ [\,he_1 = he_2\,]\ \&\ [\,he_1\ be\ s\,]\ \&\ [\,he_2\ be\ t\,]}{therefore,\quad [\,A\,(he_2)\,]\ \&\ [\,he_2\ be\ t\,]\ .}$$

By contrast, the attributive use of s in A(s) is analysed as 12a/. It was suggested in the first chapter that the quantifier Q here is existential. For the indeterminacy of that quantifier matches the non-specificity of s. But we are not bound by this in all cases. In particular, remember that if there is exactly one F, $\ulcorner \exists v\,(F\ \&\ G)\urcorner$ is (materially) equivalent to $\ulcorner \forall v(F \supset G)\urcorner$. Though the attributive use of a definite nounphrase is captured by the existential quantifier, such a use of an indefinite nounphrase may not be. For example, 'John admires a new car' paraphrases as 'John admires any new car', or '... all new cars'.

7. Intensionality

If 'The F is G' and 'The F is n' are indeed analysed as ' $\exists!x(Fx \ \&\ Gx)$' and ' $\exists!x(Fx \ \&\ x = n)$' respectively (see p. 18), we can infer 'Gn', that is, 'n is G', from them together. We saw in the first chapter that we can substitute under identity if the quantifier in the analysans has widest scope (this is also true if the first sentence is taken as $\ulcorner \forall v\,(F \supset G)\urcorner$). The reason substitution is possible is that satisfaction is extensional. If a satisfies A, and a = b, then b satisfies A. So why can we not infer from 'Oedipus fears his

mother' that Oedipus fears Jocasta, given that we know, although he doesn't, that she is his mother? Because an object is feared as such and such an object. Fearing is epistemic, and connotes, or essentially involves, a reason or form of presentation. Of course, if we ignore this reason or aspect, and simply refer to the object of fear, then we can infer that he fears an object under some description under which he does not fear it (for those who, as Meinong said, like paradoxical ways of putting it).

The obvious reaction, therefore, is to demand in these case quantification over objects under some description. We might call these described objects concepts, for which the criterion of identity is intensional identity of objects. But this is misleading, for it is certainly an object which is feared, not a concept. As we saw in the first chapter, the description is essential. We are speaking of something only under some description. Given our usual understanding of reference as extensional, we are certainly not referring to anything with the description.

What we must do is to analyse a non-substitutive (essential) occurrence of a definite description in terms of a (substitutable) attributive occurrence of a less complex description, under some non-extensional restriction. We do not want, as would be the usual recursive analysis of quantified expressions, to analyse intensional

quantified statements directly in terms of an intensional atomic case, since the atomic case here is simply that with a referential occurrence of some term t in A(t). The referential case is extensional and substitutable, and so therefore, is the atomic case. The intensionality comes with the quantifier (though not with that alone).

We saw that used referentially the description is irrelevant to the truth-condition. It is only when used attributively or quantificationally that the content of the description has a direct semantic relevance. In the third chapter, I argued that the deep structure of quantification involved a complex nounphrase structure, in which the (lexically specified, that is, descriptive) head noun of the quantifier is subordinated to its matrix. This is precisely what we need here. We need to say, for example, that there is something which is Oedipus' mother and <u>as such</u> feared by Oedipus:

13/ $[_S[_V\ \exists][_{NP}\ [_{NP}(\text{mother of Oedipus})_1\ ]$
$[_S\text{Oedipus fears (mother of Oedipus)}_1\ ]]]$.

The properties 'mother of Oedipus' and 'being feared by Oedipus' are coinstantiated, but satisfaction of the first property is essential to satisfaction of the second.

Let me rehearse the arguments that have led us to this position. Firstly, I showed that an attributive use of a description is a necessary condition of the context containing it being opaque - of its position

being non-substitutable. Conversely, substitutability (salva veritate) is a necessary condition of a referential use. Secondly, each attributive use is quantificational - the attributively used phrase acts with negation in the way typical of those expressions normally called quantified phrases, and differently from normal uses of, in particular, proper names (more generally, Frege's Eigennamen). Thirdly, the deep structure of quantification categorises the quantifier as a predicate of a sentence from which a head noun(-phrase) has been abstracted, that is, in effect, of a propositional function. It follows that an intensional truth-definition acting on such a structural description cannot analyse an opaque context (directly) in terms of the atomic (referential) case. Nor is the truth-condition of, for example, 13/ the same as that of 'There is something which is feared by Oedipus and as such Oedipus' mother'. The restriction in the head noun, and the matrix, are not treated, as they are in restricted quantification in first-order logic as symmetrical.

A first thought is to intensionalise the truth-definition as follows: our structural description, such as 13/ gives us both a quantifier and a distinguished common noun. Perhaps we can give the quantifier its usual recursive satisfaction clause by reducing the distinguished head noun to one lexically empty, and retain the intensionality by embedding the head noun in

a necessity-context: $\underline{s} \models (\exists Y)(X)$ if and only if $\underline{s} \models (\exists y)(X[y/Y]$ *and* $\Box(y \text{ is } Y))$. Here y is a lexically empty head noun (such as 'one' or 'thing'). We would then have:

$\underline{s} \models (\exists Y)(X)$ if and only if $\exists\, \underline{s}' \sim_a \underline{s}$, $\underline{s}' \models X[a/Y]$ and $\underline{s}' \models \Box$ (a is Y).

This requires us to make sense of *de re* modality. We have quantified into the context $\ulcorner \Box$ (.. is Y)$\urcorner$. Put another way, we have to decide on the truth of $\ulcorner \Box$ (a is Y)$\urcorner$, for a semantically vacuous, that is, referentially used, term a. But this is not what we required. We wished to know if Oedipus feared his mother as such, not whether he feared something which was of necessity (*de re*) his mother. The first intensionality is *de dicto*.

We have two conflicting demands. On the one hand, a quantifier can attach to a complex open sentence (a compound predicate), so that we need to give an inductive truth- (or satisfaction-) condition for the quantifier, in terms of the satisfaction-conditions for sentences of lower degree (logical complexity). On the other hand, it is only the quantified clauses that have an intensional truth-condition. The atomic clauses are those with referentially used subjects, and so are extensional.

A suggestion is to introduce a kind of theoretical entity, that is, an expression of lower degree than the

quantified sentence which ultimately resolves into atomic constituents, yet which is still intensional, and so can never be realised as such in any surface (that is, real) structure. We introduce quasi-terms y_i , $i > 0$, quasi-formulae formed in the usual way, but including quasi-terms in their primitive vocabulary, and quasi-sequences to satisfy quasi-formulae.

The satisfaction-conditions for each intensional predicate must be defined for an object and a property jointly. If we can identify properties with one another under synonymy of the corresponding expressions, we can compare such a condition with interpreting the subject as referring to a sense or intension. But here we really do apply the predicate to an object - under a description (as possessing a certain property). Let us define, for each sequence $\underline{s}$, the quasi-sequence $\underline{s}\,[Y/i\,]$ as $\underline{s}$ with the ith term s_i replaced by the pair $< s_i , Y >$. Then $\underline{s} \models (\exists Y_i)(X)$ if and only if $\exists \underline{s}' \sim_i \underline{s}$, $\underline{s}'\,[Y/i\,] \models X\,[y_i/Y\,]$, for the ith quasi-term y_i (standardly determined), which cannot be realised overtly in surface structure. That is, every such quasi-term must be replaced by a quantified phrase.

These quasi-terms enter the theory simply to set up the inductive definition of truth. That is, quasi-formulae play much the same role here as open formulae do already. No sentence of a natural language contains free variables. But to give the truth-condition of

quantified sentences recursively in terms of some semantic condition on their parts it is useful to introduce open formulae. For example, A is a subformula of $\ulcorner \forall v A \urcorner$; in general, if the latter is a sentence (a closed formula) the former is open.

Similarly here, quasi-formulae are treated semantically only in order to give a recursive definition of the truth of intensional quantified sentences in terms of expressions of lower degree. Just as the notion of satisfaction by sequences is introduced to give a semantics for open formulae, so the notion of satisfaction by quasi-sequences is introduced to give the semantics for quasi-formulae.

A relation such as 'fears' is then to be assigned a set of pairs of objects and pairs of objects and properties, so that

$$\underline{s} \models \ulcorner y_i \text{ fears } y_j \urcorner \text{ iff } \langle s_i, s_j \rangle \in \overline{\text{fears}},$$

where s_i is an object, s_j a pair, and y_j a quasi-term.

The referential (real atomic) case for an intensional predicate follows by requiring that the predicate be satisfied by an object under some description or other.

8. Conclusion

Quine defined a referential occurrence as one open to substitution. We now see that this is prejudicial.

We can distinguish referential occurrences from non-referential ones. We can distinguish cases where substitution, that is, the move to an amended statement, is possible, from those where it is not. But these do not exactly tie together. Nonetheless, it is a necessary condition of the referential use that we can reexpress the statement using some other device, description or name, to do the same job.

Frege concluded that if a term in an intensional context was not referring in the ordinary way, then it was referring to a different object from usual. Quine concluded that it was not referring at all (it is not a purely referential occurrence). I am proceeding along Quine's path. But I wish to know what a referential occurrence is, over and above its extensionality - its allowing substitution salva veritate.

We can conclude that both definite and indefinite nounphrases admit of both referential and attributive uses. The attributive use of nounphrases is quantificational; and it is a mistake to suppose that quantified expressions refer, or can be used referringly. The description in a referentially used nounphrase must have the speaker's endorsement, but that in an attributively used one need not. The referential/attributive distinction allows us to see the sense in which the description is essential in certain intensional contexts, and so not open to substitution. The difference in logical form of

the referential and attributive uses of nounphrases is constituted by the deep structural distinction between restrictive and non-restrictive relative clauses.

Part II

Chapter Five: Identity and Reference

1. Introduction

I wish to consider proper names and nounphrases with the definite and indefinite articles, 'the F' and 'an F', in their use in referring. As an interesting question in itself, but also as a lead into this issue, I shall look at the uses of these phrases with the copula 'is'. Some such uses result in what are commonly called "identity statements", in which the copula is termed the 'is' of identity, marked off from the 'is' of predication.

I hold that we do not need to locate the difference between identity statements and others of the form ⌜A is B⌝ in a distinction between two copulas. It lies rather in the different uses of the phrase following the one copula, the phrase occupying the predicate position in the sentence. I need to make a sharp distinction between the syntactic or grammatical notion of position, and that of use or occurrence, which I will argue is in this instance semantic. It is not simply a pragmatic distinction in interpretation. Because one of these uses is characteristic of nounphrases in predicate position, I will term one such use a "predicative" one. But the same expression may also be used in another way,

namely "referentially", in predicate position. It is sentences with nounphrases in this position used in the latter way which are called statements of identity. A referential use is characteristic of a nounphrase in subject position. Once again, terms can there be used predicatively. 'Referentially', in fact, marks out not only a way of using nounphrases in subject position, but generally that "uniquely referring use" examined by Strawson in his classic paper on referring.[1] Later in this chapter I shall draw some conclusions about referring from the general treatment of sentences of the form ⌜A is B⌝ to be given.

2. Geach's Suggestion

Geach suggested that the copula need not be treated as itself the source of the change in the force of 'is' when a definite or indefinite nounphrase in predicate position is replaced by a proper name. There is not a special copula, but a different use of the predicate expression.[2] Whereas, he says, a proper name used here

---

1 P. Strawson, "On Referring", Mind 59 (1950), 320-44.

2 P. Geach, Reference and Generality (Ithaca & London, 1962), 48. See also D. Mitchell, An Introduction to Logic (London, 1962), 87-94; D. Wiggins, "Identity-Statements", in R. Butler (ed.), Analytical Philosophy II (Oxford, 1965), 42-3, 69; and M. Lockwood, "On Predicating

is always a referring expression, a definite or indefinite nounphrase such as 'the murderer of Smith' or 'a murderer' does not occur referentially in this position, but predicatively or attributively. The predicative use is so-called paronymously from a nounphrase's being characteristically so used in predicate position. I am, however, claiming that it need not always be so used there (though it usually is), and that it may be used predicatively or attributively elsewhere in the sentence. The distinction suggested here corresponds in more than just name with the contrast between referential and attributive uses of definite descriptions developed by Donnellan.[3] To show this I will use Donnellan's criteria for referential and attributive uses to distinguish identity statements from predications in the way hinted at, but not elaborated, by Geach.

I will start, therefore, with a schematic sentence ⌜A is B⌝, which can be completed by the substitution of nounphrases for A and for B. I will consider just three sorts of nounphrase for the substitution - proper names, definite descriptions, and indefinite singular terms - and will describe their use in the schema in terms of the distinction between referential and attributive

---

Proper Names", Philosophical Review 84 (1975), 471-98.

3 K. Donnellan, "Reference and Definite Descriptions", Philosophical Review 75 (1966), 281-304.

uses. The epithet 'referential' is to tag the uniquely referring use of (that is, way of using) a nounphrase to pick out or mention a particular item. Any use which does not so serve to pick out or identify a particular item, but speaks of whomever or whatever is of some sort, is then to be called attributive.

3. The Search for a Paradigm

Already a number of questions arise. Although Geach treats proper names as paradigmatically referential, and indefinite nounphrases as paradigmatically attributive or predicative, might not the distinction of two uses for definite descriptions generalise to them? Are there any restrictions on which of these uses a phrase may have when substituted into our schema? Does the whole gamut of pairs of uses give us a better understanding of the roles of parts of a sentence as on the one hand introducing an item into discourse to say something about (referring) and on the other saying something about it (predicating)?

Frege's affirmation that "the singular definite article always indicates an object, whereas the indefinite article accompanies a concept-word",[4] followed the traditional separation of the referring use of a

---

4 G. Frege, "On Concept and Object", in P. Geach & M. Black (edd.), Philosophical Writings (Oxford, 1966), 45.

proper name (a complete expression) from the predicative use of an indefinite phrase (an incomplete expression), which, in his way, Geach reiterates. But in making this claim Frege was led to reject what I want to show can be quite naturally described as a referring use of the indefinite nounphrase in, say,

> 1/ A distinguished member of the Cabinet (whose identity may not be revealed at the present time) stood out firmly against the policy.

In contrast with the customary association of the introducing or referring role in a sentence with the subject, and with definite nounphrases, the describing or predicative role with the predicate, and with indefinite phrases, I wish to explore the various forms of sentences within our schema to see what is in fact possible.

The classic example of an identity statement is 'Cicero was Tully' (I'll consider this to be an instance of ⌜A is B⌝). We may say that each phrase is used identifyingly, referringly, to pick out an individual, and these individuals are asserted to be one and the same. Frege's early view of identity was that 'a = b' says that the object referred to by 'a' is identical with that referred to by 'b'. His later rejection claimed that this is not what 'a = b' means (is not its sense). It does not mean that the names 'a' and 'b' are coreferential, but that the objects a and b are identical. In

the same way, 'Fa' does not mean that the object referred to by 'a' has the property F, but that a is F. Nonetheless, each of these conditions is a necessary and sufficient one for the truth of the sentence it analyses. 'a' and 'b' are used referentially to pick out an object. A condition for successfully referring will then be that there be an object referred to; though a phrase may occur and be used referentially even when it fails to refer, just as a sentence can be asserted when it is false.

In contrast, we have 'A horse is a four-legged animal'. This would by tradition be construed roughly as 'All (properly constituted) horses are four-legged animals', or 'If anything is a horse, it is a four-legged animal'. The nounphrases are now neatly in predicate position. (Some terms, such as 'centaur', may require a subjunctive construction here.) Such a predicative (sometimes refined to a higher-level) analysis of generic sentences is common. If we recognise that nounphrases can be used predicatively in subject position we do not need to carry out this regimentation. Earlier I used the "whatever" paraphrase, which itself places the nounphrase in predicate position, to mark out the attributive use. Here we can say, 'Whatever is a horse is a four-legged animal'.

It is interesting that some attributive uses of nounphrases in subject position can be put in the plural,

others cannot. It seems likely, in fact, that the ones that can are just those commonly called "generic". Compare

2a/ The owner of Abbotsford was a good rider,

meaning that that one person, whoever he was (in fact Scott), was a good rider, with

2b/ The owner of Abbotsford was (always) a good rider,

meaning that whoever, at any time, owned Abbotsford was a good rider (and this, despite the fact that many of them retired from the hunt with age). 2b/ can be rephrased as 'Owners of Abbotsford were good riders', or 'The owners of Abbotsford were good riders', but 2a/ cannot. In each case we are using the description attributively. The distinction lies either in the fact that in 2a/ the description seems really to be elliptical for a unique description such as 'the owner of Abbotsford who died in 1832', or in a difference of tense - between a habitual past tense and a perfect or punctual past.

In the same way, we can distinguish between

3a/ The horse has four legs,

meaning that the one animal, whichever one it was, which, say, crossed the yard at the time of Smith's murder, had its full complement of legs (there may have been a suspicion of lameness to be allayed), and

3b/ The horse (always) has four legs,

meaning that every creature of this species is (naturally, if not in fact) quadrupedal. The latter, 3b/, can be rephrased as 'Horses have four legs', but 3a/ cannot. However, in both cases we are using the description attributively. Once again, the distinction might be drawn by examining in what way the description in 3a/ is elliptical, or by contrasting the different uses of the present tense. I will describe all sentences with such an attributive use of the subject-term as "generic", but it might be instructive in another place to explore the differences.

4. The Theoretical Scheme

These then are our paradigms: the referential use of proper names in subject position, the attributive use of indefinites in predicate position. These paradigms are a special case of that common philosophical presumption that the typical logical subject is a proper name referring to an object; contrasted with the use of other nounphrases as logical predicates (to be regimented to a position as predicates in first-order logic, say) to describe objects, and to ascribe properties to them. I wish to leave myself open to discovering that these two sets of quadruples - proper names, subjects, referring, objects, on the one hand, and other sorts of nounphrase, predicates, describing, properties, on the other - though commonly cohering in this way, need not. Indeed, to be open to discovering that any one member

of one quadruple can pair with any member of the other.

I turn to consider the following sentences:

4a/ The person who was making all that row at the weekend was Enoch Powell

4b/ The person who was making all that row at the weekend was the MP for South Down

4c/ The Chancellor of the Exchequer is the Prime Minister's next-door neighbour

4d/ The Prime Minister is the leader of the Government

4e/ A distinguished member of the Cabinet is the butt of the right-wing Press

In 4a/ the proper name has its paradigmatic role. On the most natural interpretation, we have first characterised someone, and have proceeded to identify him. We have introduced someone through a predicative use of the subject phrase, and have then identified him by means of a referring phrase. But 4b/ has more than one natural interpretation. Here either phrase may have been used identifyingly. We may, as in the use of 4a/, have characterised someone by the subject phrase without, in a sense, picking him out, and proceeded, with the predicate description, to identify him. Equally, we may, through the subject description, have identified him, and then, by means of the predicate phrase, have described him. 4c/ offers us yet another possibility. Although we may be identifying the Chancellor (parallelling 4a/),

or the Prime Minister's neighbour (parallelling the second use of 4b/), we may well be identifying noone. For 4c/ can be used to explain the connection between the role of Chancellor and his place of residence irrespective of what particular person holds that office or occupies that house. So that in such a use both phrases have a predicative use. (Indeed, this sort of reading is also just possible for 4b/). Such is likewise a very natural interpretation of 4d/, in which neither phrase identifies or picks out any particular person spoken of. Often in such a use both 4c/ and 4d/ can be rephrased in the plural. So we could describe this use, following our earlier remarks, as generic. It is also a possible way of understanding 4e/. But so, we shall see, is the account of it as first referring to a member of the Cabinet, and then describing him.

We have, therefore, the pairs:

5a/ referential - attributive

5b/ attributive - referential

5c/ attributive - attributive

5d/ referential - referential

4a/ is read naturally as having 5b/ for its form, 4d/ as having 5c/. Whereas the more normal, or paradigmatic, forms 5a/ and 5d/ describe the subject-predicate statement and the identity statement. That is, I shall use 'subject-predicate' to mean "sentence with a referential subject phrase and a predicative predicate phrase". We

do not need a distinction between predicative and identity copulas, and indeed could not with that distinction alone account for, let us call it (after Strawson), the form of identification 5b/, nor for the generic form 5c/.

5. Other Possibilities

Moreover, proper names can be divorced from their referential role. For what seems to suit them to this use is their tagging an individual throughout his existence. But there are cases where such a name may be held only for a duration, as for example, when we report "Anthony Andrewes was Kate Kennedy this year", or "A first-year student was Kate Kennedy last year", where the name 'Kate Kennedy' is bestowed on someone only in virtue of, and during, his performance in an historical pageant. Similarly, the (attributively used) proper name 'Gypsy Rose Lee' used at every village fair is tied to the attributive or generic definite description 'Britain's premier palmist'. 'Was Kate Kennedy' here predicates something of Anthony Andrewes, just as 'was a student' and 'was the best student' do. None of these need be construed as asserting an identity. So uniqueness of application of each phrase is not a sufficient criterion of a statement's being an identity statement, nor of a phrase's being a referring phrase. Normally when we "fix the reference" of a proper name with a definite description, the description is used referentially. In

certain circumstances it need not. No doubt we could construe the above sentences as referring to roles (or at least replace them with ones containing expressions which do). Or we might wish to withhold the epithet 'proper name' simply because of the term's perhaps applying to more than one individual. We do not need to do this. We can have a purely syntactic criterion of a term's being a proper name (for example, being singular and rejecting any article - or, at worst, by distributional properties), as we can of a term's being an indefinite nounphrase. We can then discover the attributive and referential uses of each respectively.

Indeed, at the other extreme are referential uses of indefinite nounphrases. Frege is unusual in suggesting that such a phrase in 4e/ refers to something other than a flesh and blood individual (namely a concept). But a move almost as unfortunate as Frege's is made when every such phrase is considered to hide an existential quantifier, that is, when every sentence containing that phrase is represented (as its logical form) in first-order logic by a formula using only bound variables and predicates in its place. For so to analyse the phrase 'an F' is to imply that the denial of 'An F is G' is invariably 'No F is G', and never 'An F is not G'. Example 1/ could, however, later be denied by saying, "No, he didn't. Everyone is supposed to believe he did, but, in fact, he capitulated. Nevertheless, a colleague of

his, equally distinguished, did stand firm." This general regimentation of indefinite nounphrases into in all cases quantified expressions is symptomatic of an infatuation with the quantificational forms of first-order logic, to the neglect of its atomic basis, which obscures the referring use of language. If we restrict ourselves to individual variables and constants, then no expression with any content can be said to refer. At most we can assign constants to elements of the domain, and produce general statements using quantifiers.

The present notion of a referential use is, in intention, the same as Quine's talk of a purely referential occurrence of a singular term. It derives, as does Quine's, from what Leonard Linsky has called "the Principle of Reference", that what is true of something is true of it regardless of how it is referred to. By the principle, Quine characterises certain occurrences of terms as non-referential, others as purely referential. But he then replaces the notion of occurrence by one of referential position, and the terms in those positions give way under regimentation to variables - and discussion shifts to a referential interpretation of quantification. Indeed, in unwise moments, Quine speaks of variables referring to objects. Quine is, of course, an extreme case, in eliminating all singular terms. But the mild form is also wrong, in implying that the only referring expressions are proper names.

What I am doing here is reasserting the intuitive division between referring and quantified expressions. In a sense I do not even need to argue that a certain expression is a referring expression. For the natural description is to treat all nounphrases as referring to objects - and some at least must do so, for any assertion to be assessed as true or false. But we then discover that some phrases cannot be treated like this. The standard argument is Frege's observation that 'All mammals are not land-dwellers' is not the contradictory, but the contrary, of 'All mammals are land-dwellers' (op. cit., 48). It follows that 'all mammals' is not a semantic unit, and is not the logical subject of the sentences containing it. Yet this is only to mark off all uses of 'all mammals' from other expressions which are semantically unitary, and do constitute the logical subject. So that we can distinguish those uses of sentences containing 'the F' or 'an F' whose contradictory results from negating the predicate (and so, in which the nounphrase occurs referentially) from those where it results from altering the determiner itself, to, for example, 'no' (in which, therefore, the determiner is used as a quantifier). An indefinite nounphrase may, and usually will, be used predicatively. It may also be used to mention a certain individual in a uniquely referring way; and here the uniqueness is given not by the content of the description, but by the fact that it

is a referring expression (see Strawson, op. cit., 342).

The failure of uniqueness of description in the indefinite case makes the "whatever" paraphrase unworkable. Under the condition of uniqueness, 'some' is equivalent to 'any'. If, however, an indefinite phrase is not used referentially, it may be construed in two different ways. 4e/ may, quite sensibly, mean that some distinguished Cabinet figure is being attacked by the press, or that any Minister whose distinction is recognised will become the object of attack (the latter being the true generic).

Neither the predication of a proper name nor the referential use of an indefinite nounphrase has any claim to be considered usual. There are very clear reasons for this: a proper name usually identifies one individual, an indefinite nounphrase many. But each is still a possible use of these expressions. What it is necessary to appreciate is how they are possible, and how the definite nounphrase, in possessing aspects of both proper name and indefinite phrase, can in many cases fulfil either role. For it is like a proper name in being normally unique in its application, but like an indefinite nounphrase in containing a general term, and possessing a sense or connotation.

6. Reference and denotation

I have linked the notion of reference directly to

an extension of Donnellan's talk of a referential use of definite descriptions to all three sorts of nounphrase. Donnellan characterised the other use, the attributive, as "reference in a very weak sense", preferring to use 'denotation' for the relation of any such phrase to the object of which it can be truly predicated. I will here take this notion, 'of which it can be truly predicated', which doubtless itself deserves consideration, as primitive. It is time-relative: C denotes m at some time if and only if a token of ⌜a is C⌝, in which a refers to m, is true at that time. Following my rejection of a distinction between two copulas, I have replaced Russell's and Donnellan's 'is identical with' by 'is'. This formulation also allows parts of speech other than nounphrases to take the place of C. Both referentially and attributively used phrases have denotation. A referentially used phrase has a further property. What can it be? What is meant by Geach and by Donnellan in their tagging one of these uses "referential", and claiming that only when so used does a phrase refer to something?

Firstly, we must be clear that the distinction between reference and denotation is not merely terminological. Not to make the distinction would invite Geach's diatribe against the two-name theory of predication (or truth - op. cit., § 28). I am not saying that a subject-predicate statement (5a/) consists of two names, one used referentially, the other attributively, true

just if they are names of, that is, denote, the same object. To suppose this would be both to treat a referential use of a nounphrase as one which denotes uniquely, and to treat an attributive use of one as having a semantic relation which like reference correlates that expression with an object. But a phrase is used attributively or predicatively precisely when it doesn't refer and there is no referent. In particular, if the attributively used phrase is indefinite, it may have many <u>denotata</u> - there may be many things of which (on this occasion) it may be truly predicated. No one of these is on that occasion picked out specifically by the phrase. If it were, the phrase would be being used referentially. Nor does this imply that it is uniqueness of denotation which yields reference. When I remark that whoever murdered Smith must be insane, I have in a sense picked out an individual (if just one person committed the deed). But such a "whoever" phrase is supposed to typify an attributive use. Indeed, here any other phrase denoting the same individual (such as 'whoever is in the dock') would not "do the same job". Moreover, we would not ask to whom I had <u>referred</u> when I spoke of whoever murdered Smith, no more than we would ask to whom I had referred if I said someone was insane. Of course, if my statement were true, there would be, in these cases, someone in virtue of whom it was true. Nevertheless, I have not referred to him, and the present task is to isolate that

other notion of picking out or identifying which does not simply mean uniqueness of application of a predicate, but provides a subject of predication.

Nor need one say that there is anything else, apart from its denotata, which is identified by an attributive phrase. As far as predicates are concerned, there need be no universal, or individual, qualities or properties or Fregean concepts. There are ways of referring to things, what Frege called "modes of presentation", senses or meanings. But meaning is not a semantic relation between an expression and some non-linguistic entity. The concept of reference is sui generis in being that semantic concept which does correlate a phrase with an object picked out by the phrase (though that phrase may, indeed, pick out a number, a property, a unicorn, or a fact). In a subject-predicate statement, an object is picked out or identified by the subject. It is then described. Put extensionally, it is asserted to be one of the denotata of the predicate, to fall under that way of referring to things too. But it is not referred to by the predicate. That is why it is a predicate. Although the predicate could, in such a case, that is, when the predicate is a nounphrase, be used to refer to an object, the mistake of the two-name theory is to suppose that it is doing so. Neither is it referring to, or in any other way introducing, its own object.

7. Identifying

We can begin to tie the following notions together into a concept of reference: the use of a phrase to pick out and identify something before describing it (5a/ is the paradigm). But we can still wonder quite what is the force of 'identify' here, a problem which is not helped by the metaphor of picking out. A common objection to my procedure so far, induced most strongly by my treating reference together with meaning and truth as a semantic notion, would claim that reference, or at least referring, a speech act, is a matter for pragmatics. In other words, it is primarily people who utter sentences who refer, mention or pick out what they are talking about, and it is at best misleading to attribute reference to the expressions themselves.

This is like saying that a description of chess is misleading if it says that bishops move diagonally. Of course, it is people who move bishops diagonally, for it is people who play chess. But people can also move bishops transversely, or throw them on the floor. To phrase the description abstractly and within a formal theoretical framework (chess or semantics) implies that the possibilities specified are those given by the overall constraints of its being this particular activity - the game of chess or the activity of linguistic communication.

How, then, does a speaker identify something? He

may point to it (even pick it out literally), give directions for finding it, or simply produce an "identifying description", one which in the circumstances is sufficient to show which object he means, even though it need not always be a unique characterisation. So that actually to identify something, and to resolve the question of which thing is being referred to, is indeed a matter for pragmatics, in depending on the context of utterance. My conception of semantics is of a theory of truth-conditions abstracted from contextual considerations. We can see how this conception is to be detailed by looking at an example of a (type-) sentence containing a token-reflexive word, such as a deictic pronoun:

6/ He is a logician.

I wish to give the truth-conditions for 6/ as the conditions of the type-sentence, generalising over all token-utterances. What the expression 'he' refers to can be different between tokens: the type-word 'he' refers to different people on different occasions (tokens) of utterance. So to speak of reference in the semantics we need to speak generally of <u>whatever</u> any token of the work 'he' refers to. We can therefore give such a condition as this: given a token α of the type-sentence 6/ in which the token of 'he' refers to <u>m</u>, α is true (under interpretation I) if and only if <u>m</u> is a member of the denotation (under I) of 'a logician'.

What we need now to consider is whether there is any difference in the semantic category of certain phrases in a sentence which give necessary conditions for their being used by speakers to refer and to identify, such that those expressions can also be used in a way which assigns them to a different semantic category, disqualifying them from a referential use.

Donnellan, in his original article, believed the referential/attributive distinction to be pragmatic (op. cit., 298). He had no argument, he admitted. Yet there was no apparent syntactic ambiguity, and certainly no semantic ambiguity in the meaning of nay words. The burden of proof lay, therefore, on those who wished to clain it was semantic.

I have taken up this challenge and indicated a syntactic ambiguity between the two uses, given as a difference in logical form or deep structure, which therefore generates and explains a semantic ambiguity by the use of the deep structures as input structural descriptions for the semantics. That was the burden of the fourth chapter. We may compare the situation with that for the sentence 'Visiting relatives can be exhausting'. There is no ambiguity in the meanings of the constituent words. Nor is there any "apparent" syntactic ambiguity. There is only one possible immediate constituent analysis. In order to represent the fact that 'visiting' can be understood as having for

its (logical) subject either the speaker or the relatives, it is necessary to use a theory with two levels of representation, one giving surface (or grammatical) syntactic relations, the other deep (functional or logical) syntactic relations. The absence of superficial or apparent syntactic ambiguity does not force a pragmatic account. The case is exactly similar for the difference between referential and attributive uses or occurrences of nounphrases.

Detractors of the distinction between semantics and pragmatics have pointed to such dependence of the pragmatic notion of reference on certain semantic necessities. This does not show that there is no distinction between semantics and pragmatics. No more does the dependence of truth-conditional semantics on inductively framed syntactic formation rules obviate the need to distinguish grammaticality from truth. Nor does the interrelation of locutionary and illocutionary acts void that very distinction. In fact, such a dependence of the pragmatics of reference on its semantics (and of its semantics on its syntax) enables us to pass beyond supposing that an expression can refer to whatever the speaker believes or intends it to, and see what constraints on a term's introduction of an object into discourse there are.

Austin noted that referring is at most part of any speech act, of, say, stating or identifying.[5] He considered

---

5 J.L. Austin, "How to Talk", in Philosophical Papers

identifying to be a whole performance using the whole utterance. We can, however, abstract from those ancillary parts of the act which concern certain expressions in the utterance, to discover the conventions governing the semantic features of expressions necessary for their use in such identifications. And we can, if we wish, use 'identify' for these features, if we realise that it now signifies a property of the expressions, not of the speaker.

8. Misreferring

So what is it, independently of the speech-act which the sentence containing it is used to perform, that makes one expression in the sentence a referring one, such that it is a referring expression regardless of what particular speech-act - stating, identifying, judging, promising - the whole sentence is used to perform? The important fact about reference and referring expressions is that they are linked to objects in a way that is semantically irrespective of their content. In other words, the referent of a referentially used phrase need not be one of its denotata - that or those object(s) of which it may be truly predicated. The content of such a phrase is relevant to its predicative or attributive uses, and only, semantically, to that. To discover

---

(Oxford, 1961/70), 139.

this semantic vacuity, as we might call it, of reference is, of course, a matter for pragmatics, of observing what acts speakers perform, and what beliefs and other propositional attitudes they acquire and change as a result of partaking in speech-act situations. The content of such phrases is relevant in the context in regard to the success of the audience in determining the intended referent. That is all that the content of the expression does in referring. So that when we abstract from the contextual features to consider the semantical truth-conditions of the (type-)sentences themselves all that is relevant to those conditions is which object is assigned to each referentially used phrase, and not the meaning of the phrase at all.

Soon after the 1970 election, Alec Douglas-Home referred to Harold Wilson as "the Prime Minister", despite the fact that Ted Heath then held that office. It is possible to refer incorrectly. The temptation to describe this as a failure to refer at all, or as an (unintentional) reference to Heath, epitomises an attempt to improve on language. But an adequate description of language, even one that regiments sentences to a logical form, need not evangelise. We should describe language as it is, not force it into the straightjacket of some metaphysics of existence or of philosophical grammar. One can refer to Santa Claus, even though he does not exist, and our semantics should explain how this is possible, not purport

to show that it is impossible. One can refer incorrectly to Wilson as "the Prime Minister" (under certain circumstances), and the semantics should likewise show how this is done. In this way we may begin to understand such features of our language. Yet no systematic account can be given in the semantics (lacking specific reference to context) of which facets of the description, of the content of the referring phrase, may fail to hold. For any one or more of them can fail in an appropriate context. The failure may be due to mistaken belief, overcontrived allusion, or whatever. There is no way of describing this in context-independent terms.

9. A Rival View

It might be suggested, however, that we distinguish what is (in fact) said on such occasions of misreference from what in conveyed. We do not need here to distinguish referential from attributive uses of nounphrases. The truth-condition of what is said is simply that whatever uniquely satisfies the description used to refer also satisfies the predicate. Thus what Douglas-Home said was, strictly speaking, false, if what he said was not true of Heath. We can also, however, consider what was (pragmatically) conveyed by his utterance, the truth-condition of which is given by that of some other sentence. What, on any particular occasion, that other corrected sentence is must be indicated in the pragmatics, just as

on the view advocated above what is in fact referred to must be so indicated.

Firstly, can we argue for this view on grounds of economy? It might seem that we have here a simpler view, requiring only a unitary specification of the truth-conditions of each sentence. This is to ignore the added complications in the pragmatics. It is now necessary there not only to determine what has been misreferred to, but also to provide a sentence which says what the former merely conveyed. This requires, therefore, the selection of a nounphrase which <u>is</u> appropriate in that context for that speaker correctly to refer to what he previously misreferred to. It is clear then that, as far as truth is concerned, the difference between the two accounts is simply that between providing the truth-condition for misreference in the semantics (as I have done) and in the pragmatics.

Let us turn, therefore, to consider whether there is any difference in explanatory power. This is twofold. Firstly, the theory with a unitary semantics which refuses to distinguish referential from attributive uses of nounphrases misses the intuitive difference between simply mentioning something and referring to it. For example, in 'Mary is coming to dinner', the nounphrase refers to Mary. There is no such reference in 'Someone is coming to dinner', nor in its refinement to, say, 'Just one person is a visiting speaker and she is

coming to dinner'. This intuitive difference is captured by Frege's negation test, and has led us to a notion of reference as the provision of an object for the truth-condition under no particular description. "A reference can be correct or incorrect. A description can fit, or fail to fit, the thing or person to which it is applied ... An expression used referringly has a different logical role from an expression used describingly."[6] To give the truth-condition of 'Mary is coming to dinner' as, say, 'Someone is (uniquely) Mary and is coming to dinner' ignores this difference in role.

Secondly, the recognition of a distinction between referential and attributive uses of expressions allows an analysis of opacity which cannot be given on the other theory. We saw in the first chapter that we can describe the two readings of, for example, 'The Thebans admired Laius' murderer' as resulting from referential and attributive uses of the phrase 'Laius' murderer', the former yielding a true sentence, the latter a false one. An expression is a genuine referring expression, referring to an object, if the whole statement is true or false of that object independently of how that object is referred to.

---

6 P. Strawson, "Truth", Aristotelian Society Supplementary Volume 24 (1950), 134.

10. Identity

The recognition of the distinction, and of the possibilities of misreference lead to a final understanding of the nature of reference through its transparency in the truth-condition. The subject-predicate form is paradigmatic, since in most statements we are predicating something of an object, and it is common to place the referring expression picking out the object earlier in the sentence (that is, a referential interpretation is preferred the earlier in a sentence an expression occurs). But it is not the only possibility. Forms 5b/ and 5c/ are less common. But 5d/ is not. In an identity statement there are two names. Each phrase is being used referentially, and we are expressing proper knowledge by it, namely that the object picked out by the one expression is the same as that identified by the other phrase.

This knowledge expressed, this information, is, however, not part of the semantics (of the truth-condition). If the two expressions are used in the same way (referentially), ⌜A is B⌝ is trivial. But ⌜A=B⌝, where 'is' has been replaced by '=', simply requires B to be referential. So, given the meaning that both flanking occurrences are to be treated as referential, it is trivial. Because '=' implies in this way that the right-hand (predicate) expression is used referentially, such an expression as 'Cicero = a Roman' is curious. With another expression in the sentence used referentially,

and moreover occurring earlier, it is odd to use 'a Roman' referentially. '=' is now simply a notation for specifying a referential use of the phrase following it, in conjunction with the copula. It is not another copula, different from that in, say, 'Cicero is a Roman'.

In requiring B to be used referentially, ⌜A = B⌝ is semantically as trivial as ⌜A = A⌝, since ⌜A = A⌝ and ⌜A = B⌝ have the same truth-conditions. How can they differ in information-content? Consider 'Cicero was Tully'. Just as a description can be used incorrectly to refer, so can a proper name. I can, if the circumstances are right, refer in using the name 'John' to someone whose name is not 'John'. I might, for example, be talking to someone who previously misinformed me that his name was 'John'. 'Cicero was Tully' informs one simply that this object (picked out by the expression 'Cicero') is (identical with) this object (picked out by the expression 'Tully'). But which object(s) 'Cicero' and 'Tully' pick out is not part of the semantics. That is a context-dependent matter. The pragmatic component decides what objects these expressions refer to. The semantics states simply that whatever objects are picked out are the same.

For the semantics there is nothing left but one object (if true) or two (if false). So used, the only information is the metalinguistic or pragmatic fact that such and such an object was so-called (in such and such

a context) or can be so referred to.

Similarly for an identity statement containing descriptions. Suppose that speaker s_1 identifies the Φ as the ψ, while s_2 identifies the Φ as the ξ. That is, both s_1's and s_2's utterances have the form 5b/. s_3 resolves their apparent disagreement by commenting that the ψ is the ξ. His remark contains two descriptions, each used referentially. Since, owing to the possibility of misreference, he who has been identified, the Φ (call him m), may be neither ψ nor ξ, the truth-condition of both s_1's and s_2's utterances is 'Φ m'. s_3 is not giving s_1 and s_2 any semantic information (such as that 'ψ' and 'ξ' are coinstantiated). He is observing that in this context the person picked out by s_1's use of 'the ψ' is the same person as is picked out by s_2's use of 'the ξ'. So that information is pragmatic.

Hence, an identity statement is one of the form ⌜A is B⌝ with both A and B used referentially. It is true just if one and the same object is picked out by the two names in it. Since the semantics abstracts from the exigencies of that picking out procedure, the statement must either be necessarily true or be necessarily false. When we discover an identity statement to be true, we learn what object the expressions pick out. That is no part of the semantics.

11. Conclusion

Consider our schema ⌜A is B⌝. If the form is 5a/ 'referential - attributive', and so used A in fact refers to m (that it does so is a fact of pragmatics), then the truth-condition is simply that ⌜A is B⌝ is true if and only if B can be truly predicated of m. If, however, the form is 5d/ 'referential - referential', A refers to m and B refers to n, then ⌜A is B⌝ is true if and only if m is identical with n.

The last paragraph is pointless on its own. The very distinction of referential and attributive uses also invests the expressions 'm' and 'n' in the meta-language. It would be a mistake, and one that, though often made, can hardly be made explicitly, to suppose that we can break out of these sorts of constraint on the form of language. The paragraph serves, I hope, to summarise a claim about referential uses of nounphrases which has been developed in this chapter.

I have tried to show how so-called identity statements can be fitted into a general scheme of description at one end of a short sequence with paradigmatically predicative statements at the other. From this general theoretical frame I have shown how the semantic notion of reference is needed to contrast with the simpler and more immediate notion of denotation (drawn from that of predication), without its becoming enveloped in the contextual matters of pragmatics. The simplest notion

of the semantics of nounphrases is that of denotation. The nounphrase C denotes m at some time if and only if ⌜m is C⌝ is true at that time. The difference between reference and denotation lies in the semantic vacuity of referring phrases. The denotation of the expression is irrelevant to the truth-conditions of sentences in which it occurs referentially. This feature is characteristic of proper names - the paradigmatic referring expressions. What is semantically important about a proper name is what it refers to. We might say that it has no content or sense, or that its sense is simply that this is the referent. (Just as one day we might say that people have no minds, and on another day that they do, but that minds are not what, say, Descartes thought they were.) However, since as we noted earlier, a proper name may not, on some occasion, in fact refer to the object whose name it is, its semantic import cannot be categorically that such and such is its referent. So the most we can do is characterise the sense of a proper name as that it refers to such and such an object in most normal contexts. Since proper names are given to objects largely arbitrarily and at pleasure, regardless of any properties of that object, which contexts are normal will themselves change with context. It is, therefore, best to speak of proper names as semantically vacuous. The contribution a proper name makes to the truth-condition of the sentence containing

it is simply an object (under no particular description). None of this is true, of course, of those proper names for which we found an attributive use.

We saw also that this semantic vacuity is true of one way of using nounphrases with both the definite and, infrequently, the indefinite article. It is related to another characteristic of proper names, their semantic unity, revealed in their combination with negation. We saw that Frege noticed how a singular statement is denied by negating the main verb, whereas in the denial of a statement containing a quantified expression the negative attaches to, or even alters, the quantifier. Thus a quantified phrase is semantically divided. The quantifier "belongs with the predicate". I argued that two different readings of 1/ could be distinguished by what amounted to Frege's test - one reading where the indefinite nounphrase acted as a quantified expression, attracting the negative, and another in which the negative attached to the main verb, and the nounphrase behaved in a logically unified way, as a proper name would. On the latter reading the indefinite phrase should be recognised to be a referring expression. The same distinction of uses holds also for definite descriptions, and distinguishes the same occurrences as does Donnellan's distinction between referential and attributive uses.

The important points about reference are its

transparency in the truth-condition, and the possibilties for misreference. These are, of course, related.

12. Postscript

A last idea to round it off. We might compare the semantic irrelevance of the content of the referring phrase to Russell's early account of propositions.[7] From the truth-condition given above we reify a correlate of the sentence which is to encapsulate its semantic description - its meaning or "what is said", which we then call a proposition. This entity will, in the case of 5a/, consist of an object m and a property, the sense of B. In the case of 5d/, it will consist of m and n; and if true, of m alone. The irrelevance of the content of A is shown by the presence of m "right there in the proposition" (as Kaplan puts it). Russell later rejected this possibility. In "On Denoting", he claimed that the denotation must be rejected as what is concerned in propositions containing denoting phrases.[8] The view which Russell introduced was that every sentence ⌜A is B⌝ asserts a connection between the descriptions A and B. A and B are coinstantiated, the former uniquely; that is, as Donnellan noted, A is always used predicatively

---

7 B. Russell, The Principles of Mathematics (London, 1903/37), 47, 53. See also D. Kaplan, "DThat", unpublished.

8 B. Russell, "On Denoting", Mind 14 (1905), 485.

(or attributively). Moore subscribed to this view when he remarked that there are no sentences of any natural language which can express what he called a "non-general fact", that is, a fact about a particular object.[9] In the present paper I have argued that there are, by presenting a view very similar to Russell's earlier account (and to Strawson's). Sentences containing referring expressions make assertions or express propositions about the objects referred to, and indeed, about those objects regardless of how described in those referring expressions. We can say in general that the expressions A or B occurring in the sentence ⌜A is B⌝ refer to m if and only if 'm' occurs in a transparent position in the truth-condition of ⌜A is B⌝. 'm' does occur transparently in a truth-condition ϕ if and only if ϕ entails ϕ', for any ϕ' resulting from ϕ by the substitution for 'm' of any expression with the same denotation (as defined earlier) as 'm'. Thus our meta-language captures reference by utilising transparency and eliminating misreference.

Reference captures its object pure and pristine.

---

9 G.E. Moore, "Facts and Propositions", Aristotelian Society Supplementary Volume 7 (1927), 182.

Chapter Six: The Pragmatics of Reference

1. Introduction

When one refers to something, what one refers to depends on the context of utterance. So also does the very question of whether one in fact succeeds in referring. If one does succeed in referring with some phrase to an object, some condition relating phrase and object must hold. What is it?

The phrase will usually express some content. If it is a definite description C, then the meaning or content of the description may be expressed in terms of the criteria of application of the general terms contained in C. If the phrase is a (semantically simple) proper name, there may be some object on which it has been conferred, and though we may say, with Mill, that it lacks any sense or content (any general term), it serves (semantically) to identify and individuate that item. The criterion of identity involved in this individuation will itself be given by some general term. Even for proper names we may describe the identity criterion as an expression of content.

But many people share the same name. What naturally tells us to whom a proper name in an utterance refers is our understanding of the intention of the speaker. "Whom

did you mean by 'Tom'?"[1] His intention to refer to this person ensures (in this case) that this is the referent. Yet need the referent be called 'Tom'? If the circumstances are right, it may simply be that the speaker (and audience) believe that he is called 'Tom', or that it is appropriate so to refer to him. This is as true for proper names as for definite descriptions, for which we found it to hold in the last chapter. Whereas it is commonly inappropriate to refer to a bald and elderly man by some such phrase as 'the hairy young fool', there may be circumstances in which it is possible. For example, one might come out of a performance of Othello and remark: "But Iago is a subtle character. The hairy young fool had no idea how to present the part". Perhaps the actor was of mature years, wearing a wig. The epithet 'hairy young fool' here has the same incidental force as has 'philosophical' as an appositive adjective in 'The philosophical Greeks were impressed by Plato'. Proper names, demonstrative phrases, definite and indefinite nounphrases all share a semantic autonomy of reference. Despite the fact that such a phrase may be said to possess a content, that content is (literally) semantically irrelevant to its referential function. That is, the phrase may not truly and literally be pred-

---

1 See, for example, K. Donnellan, "Reference and Definite Descriptions", Philosophical Review 75 (1966), 288.

icable of the referent. Of course, the content is not completely irrelevant (to, say, the beliefs of speaker and hearer), as we will see. The content or meaning is a feature of the predicative occurrences of the phrase, and will be the concern of a later chapter. What the phrase refers to need not possess any property comprised in the content of the phrase - if the circumstances are right.

2. Intentions and Beliefs

It is this clause, 'if the circumstances are right', that interests me here. Though the intentions of the speaker are, in a sense, a clue or a guide to the referent, we will see that they do not themselves constitute the referential connection between term and object. Moreover, an intention is not an experience or a process, an inner map from which the answer to "Whom did you mean?" can be read off. Not only do we clearly not always succeed in referring to whom we intend, we cannot always intend to do what we want. Or rather, we cannot intend to do just anything. For example, given my beliefs about physical possibilities, I cannot intend to travel to Australia faster than light (though I may fantasise about doing so), nor can I intend to ride on Pegasus, for I know there is no such animal. My intentions are tempered by my beliefs, and are describable only in terms of my possible actions (those I believe to be possible).

I can intend only what I believe to be (physically) possible.

Is this restriction on intention sufficient to regulate the capriciousness (what I have also called the semantic vacuity) of reference? No: for even for those things I can intend to do, there are limits on how I can intend to do them. Although I can, for example, intend to stop the bus by pulling the bell, I cannot, as Quinton noted, intend to stop it by tapping my knee-caps - or, at least, not unless rather special circumstances obtain.[2] Only within the description of a context of very mistaken beliefs, or very altered motor-cars, could I intend to stop my car by pressing hard on the accelerator. I could, of course, intend to stop the car by what I was doing, which was in fact pressing the accelerator. But given my present beliefs, it only makes sense to say this if I also did not believe that what I was pressing was the accelerator. So there will be an intensional description of my intention which describes my action (incorrectly) as pressing the brake. Intentions invoke intensional descriptions of their objects.

We can find similar restrictions on intentions to perform linguistic acts. I cannot, normally, intend to

---

2 K. Donnellan, "Putting Humpty Dumpty Together Again", Philosophical Review 77 (1968), 212. A.M. Quinton, The Nature of Things (London, 1973), 344.

refer to the piece of Stilton in front of me using such an expression as 'the greatest Athenian philosopher' or 'quadruplicity'. The intentions of the speaker may, in general, be a guide to that to which the speaker is referring. But we must note that in any particular case they are not a useful guide, for the circumstances directly affect what intention a speaker can have. Once we know those circumstances, we can proceed straight to his referent without consulting his intentions.

The circumstances, then, shape the speaker's intentions in two ways: firstly, he must believe the intended end to be possible, and secondly, he must believe that end to be attainable by the action he has in mind. In consequence, the vagaries of reference which some have thought to ensue on admitting that reference is describable in terms of speaker's intentions are prevented. We can still enquire, however, into a further analysis of these circumstances surrounding reference. A speaker cannot be capricious in his reference. His intention is tempered by his beliefs. Yet neither is it simply a matter of <u>his</u> beliefs. He can refer to Socrates as "the greatest Athenian philosopher" even if he believes Aristotle to have been greater (and Athenian), given, for example, a context in which he believes his audience to be Platonists.

3. <u>Audience Uptake</u>

Such an example may suggest that audience uptake is

required for reference. The point is reminiscent of Austin's trouble with performatives such as 'warn'. Can I be said to have warned you if you did not understand me to have attempted to do so? Referring, as we saw in the last chapter, is something concerned only with certain parts of the utterance, and common to many very different illocutionary acts. I think we can invoke a variant of Buridan's principle here. Geach interprets it as noting that the determination of the referent of expressions in a sentence must be prior to and independent of the determination of its truth-value (or whether it has one at all). Similarly, we can realise that we need to separate the question of what an expression, and the speaker using it, successfully referred to, from the entirely different question of whether he was successful in communicating his intentions, both so to refer and, further, so to warn and so on, to his audience. We can also note that not all speech acts are like warning in even appearing to need uptake. In particular, stating can take place independently of any audience. (Strawson suggested that the stronger the element of convention in the act the weaker was the need for uptake.[3]) No statement can have been made if the sentence's referring expressions fail to refer, for

---

3 P. Strawson, "Intention and Convention in Speech Acts", Philosophical Review 73 (1964), 439-60.

then there is nothing for the statement to be about. It is only quantified statements that are not about anything in particular.

4. An Identifying Description

We may turn to the idea that the speaker should be able to supply some namely-rider to his referring expressions - not that he need always do so, but that for genuine reference he be able to, if asked. Such a namely-rider might take the explicit form of an identifying description, specifying some property unique to the object, or it might simply and implicitly relate the object causally to the speaker (or audience), relying ultimately on acquaintance of speaker (or audience) or on a causal chain of uses of the expression terminating in some third person's acquaintance with, ability to recognise, or some other relation to, the object. The former demand, for a uniquely identifying description, has been shown by many people[4] to break down with the use of proper names, the paradigmatically referring expressions. For the point of the identifying description is that it should either be a correct description of the bearer of the name, or at least commonly believed

---

4 For example, S. Kripke, "Naming and Necessity", in D. Davidson & G. Harman (edd.), Semantics of Natural Language (Dordrecht, 1972), 253-303.

so by the relevant linguistic community. Yet we cannot specify any one, or any group of, description(s) which a speaker must be able to supply. It is always possible that most, or even all, of what we believe about something is mistaken. But we can still refer to it. There is no merit in supposing that a speaker can refer to Louis XIV (I'm here using this proper name in the correct way that we are trying to understand) by using the name 'Fred', simply because he could supply a unique description of Louis XIV if asked to identify Fred. In general the circumstances are not such that he can intend to refer to Louis XIV as "Fred" (though doubtless one can dream up suitable circumstances).

The way in which the identifying description theory falls between the two stools of requiring a speaker to supply his own identification (which can be capricious) and requiring him to supply the publicly shared description (which cannot be found), is well illustrated by Frege's struggle in finding a (Fregean) sense for proper names.[5] He wishes to distinguish variations in the sense which are forced on him by the facts of (what he calls) an "imperfect language", from the subjectivity of associated ideas or poetic colouring. There is no sure middle way, however.

---

5 G. Frege, "On Sense and Reference", in P. Geach & M. Black (ed. & tr.), Philosophical Writings (Oxford, 1966), 57-61.

Nor can we isolate reference to m by the condition that the speaker know who m is. For to know who someone is may well involve being able to identify, recognise, or supply some reasonably closely identifying description of him. Yet I may intend to direct my remarks to this specific individual regardless of whether or not I am right in my beliefs about him, and with no particular ability to recognise him.

5. The Directedness of Intention

That ability, to intend to direct remarks to a specific individual, remains a problem in itself. For the very problem of what it is to refer to this thing rather than that, which we have said can in general be settled as intending to refer to this thing (subject to certain caveats), repeats itself in asking what makes the intention the intention to refer to this. Put more generally, if referring to m is analysed in terms of thinking of m, we can still ask about the specificity or directedness of thinking of m itself. This again shows how, in any particular case, the intention is not a useful guide.[6] Yet in a sense there is no problem here. Let me draw an analogy. Semantically, we lay down the use of the Boolean connectives in a formal language in this sort of way: ⌜A & B⌝ is true under I if

---

6 See L. Wittgenstein, Zettel (Oxford, 1967), §§ 1-52.

and only if A is true under I and B is true under I. We use a conjunction in the metalanguage to explain one in the object language (and the condition looks even more circular if the metalanguage is homophonic). Nonetheless, such T-schemata serve to give the meaning of the logical connectives since on one side we are mentioning or quoting them, on the other using them, and presupposing that use, as we must in any verbal account. Similarly, in discussing and seeking an elucidation of reference it is necessary both to presuppose that words can be used referringly, and so to use them (as I did with 'Louis XIV' earlier). In particular, we use words referringly in describing the relevant intention. That description belongs to the metalanguage (the language describing the use). If there were no such use to presuppose, there would be nothing to elucidate.

6. Misreference and the Possibility of Correction

Reference is not, then, secured by the content of the referring phrase, nor by any further identifying description. Speakers are not required by the conventions and practices of language (even, *contra* Frege, of a perfect language) to be omniscient. The expression used to refer to an object may connote a property not possessed by the object. Nonetheless, the fact that it is a mistake shows that it must be correctable. In correcting it, he, or another speaker, substitutes a

different expression for the referring phrase. Reference is extensional: If s says ϕ(A), for some referring phrase A, and it is shown that the referent of A is that of B, that is, that the object referred to by s as A may also, in this context, be referred to as B, then s may assert, if he wishes, ϕ(B).

It can hardly be a surprise that reference is extensional. If we had found that referring to Cicero was not also referring to Tully, that would count as *prima facie* evidence against our analysis. Yet neither is it surprising that intending is intensional, in much the same way. We have seen that to intend to refer to Cicero it must be possible (so) to refer to Cicero. But, although referring to Cicero is *ipso facto* referring to Tully, intending to refer to Cicero is not intending to refer to Tully, any more than believing Cicero denounced Catiline is believing Tully did so. We noted, at the beginning, that, however little it really tells us, in general (with exceptions to be given later) what I refer to is what I intend to refer to. So that if it is possible for me to refer, using such and such an expression, to Cicero, and I do intend to refer to him, then I do indeed, other things being equal, refer to Cicero. I may not, however, intend to refer to Tully, despite the fact that if I do refer to Cicero, then I have referred to Tully. Is there a problem here in linking reference with intentions? Of course, not intending such and such

is not the same as intending not to do it. And even if I were to intend not to refer to Tully, I might, despite myself, find I had done so. But this does reject any simple correspondence between reference and intention. It is false that I refer to m only if I intend to refer to m.

There are other counterexamples too. I cannot intend to refer to what I believe not to exist. But I can intend to refer to what does not, in fact, exist (given that I believe it does). Whatever my intentions in that direction, I cannot succeed in referring to it. Thus intending is neither necessary nor sufficient for reference.

So if I intend to refer to something, that I succeed leaves my statement (or whatever) open to extensional substitution (salva veritate) in the reports of my audience. I cannot rely on audience uptake, for this amendment. In general, if correction is to be possible, the speaker can deviate from certain ideals and expectations only in a restricted way. He cannot, we noted, be said to have referred to the piece of cheese he ate yesterday for tea when he said, "The greatest Athenian philosopher was smelly". Under normal circumstances the deviation here is too great.

There are, however, two cases of (apparent) error which we must rule out of our discussion. The first is that of a slip of the tongue. For in this there is

nothing peculiar to reference. Although one might say, "The greatest Athenian philanthropist (meaning 'philosopher') taught Plato", one might also say, "Socrates was the greatest Athenian philanthropist", or "Socrates was seen in (meaning 'near') the market-place". The correction for a slip of the tongue can apply to all parts of speech in whatever position. In the second example, the definite description occurs attributively and not as a referring expression, but the correction is still possible. In any such case, the speaker can come back with, "I meant to say 'philosopher'", or whatever.

Another, similar, case is that of different dialects of the same language. It is quite possible for some single sound (or written symbol) to have very different meaning within two different linguistic communities speaking the same language (and if it is the same language, then it is the same word). This is not more surprising than the existence of homonyms (or ambiguous words). A speaker of British English might "correct" an American's use of 'flat' or 'professor', whether as a referring expression or otherwise. Such a "correction" might be called a translation (and it might not). It is a mistake only in being used with one meaning in that community where it has the other.

Neither of these sorts of correction gives us any insight into reference. The ones that do are cases of mistaken belief (on the part of the speaker, audience,

or reporter), and cases of allusion. One might be tempted to suppose that allusion is typical of an attributive use of an expression. Have I referred to Smith's murderer (knowing who he is), or simply alluded to him (whoever he is) ? We saw earlier that the former parenthesis does not isolate reference. And though the latter is paradigmatic of an attributive use, and 'allude' seems to fit suitably, it can also cover clear cases of reference. Thus, if I speak of him, whom Norbert Wiener reminisced was called "the Mad Hatter of Trinity",[7] my use of a non-restrictive relative clause shows that the pronoun here is deictic - referring. I can contract this, merely alluding to Russell without detailing my debt to Wiener, if I say: "The Mad Hatter of Trinity was much influenced by the original of Cheiron in Elinor Glyn's Halcyone." But I can do this only in a setting where I can expect, or at least hope, that my audience will grasp my intent (and catch my allusions). This belief or expectation may be mistaken, but I must suppose the form of words "is likely or calculated to bring about the effect at which it is aimed" (Quinton, op. cit., 356). To do this, I must believe that some at least of my hearers can pick up my allusions. If not, that is, not

---

7 I owe the allusion to Martin Gardner's notes to his edition of "Alice": Lewis Carroll, The Annotated Alice (Harmondsworth, 1965), 94.

if my hearers cannot pick them up, but if I cannot seriously believe they can, and so cannot intend so to refer, my whole utterance is null and void. I must believe that they are capable of making suitable substitution.

This substitution will not be for slips of the tongue or difference of idiom, both of which have a linguistic basis. Here, some non-linguistic pivot is needed about which to alter the manner of reference. Perhaps other (non-referring) expressions can be so altered. Such alteration, the production of an amended statement, is a necessary condition of reference.

7. Conclusion

We can draw all this together by saying that if I use a phrase A intending to refer to an object m, then I must believe that my audience can understand me to be referring to m, and that my audience can, with the expression A or some other expression, repeat the remark, themselves referring to m, within the context of their beliefs. Such beliefs about my audience's knowledge, abilities and reporting constitute necessary conditions of my intending to refer to an object using an expression.

But intending to refer to m is neither necessary nor sufficient to refer to m. If m exists, then intending to refer to m using an expression A in this context is sufficient (together with using it). For if one

cannot refer to it in this way, then one cannot intend so to do it either. While existence is the sole obstacle to the sufficiency of intentions, however, intensionality is far more of a barrier to their necessity. Nevertheless, the necessary conditions on extensionality for the intentions repeat themselves for the act of referring itself. If I am to be successful in referring to m using A, then I must believe that my audience can repeat that act of referring, using an expression consonant with their beliefs.

This shows, in fact, that the beliefs in the audience's reporting abilities cannot be a sufficient condition of intending to refer. If they were, then, if I did refer, the beliefs would be there (of necessity), and so also, as a necessary condition, the intention. Intending to refer to m would then be a necessary condition of referring to m. We saw, however, that I can intend not to refer to Tully, yet do so in consequence of my success in referring to Cicero.

So the beliefs are a necessary condition of the intention, and the intention is, with the existence of the object, a sufficient condition (given that the utterance is made) of so referring.

Chapter Seven: What Sort of Predicate is Existence?

1. Introduction

It is a commonplace to claim that existence is not a predicate: to claim that the expressions 'exist(s)' and 'there is/are' are not logically predicates, and do not ascribe properties to objects (or describe them). It is a way out of Plato's beard, the supposition that to say anything of an object, even that it does not exist, presupposes and requires the existence of a logical subject of predication (in particular, the predication of non-existence).

A classic presentation of this solution occurred in the famous symposium between Kneale and Moore in 1936. Moore was led to claim that if one were to point at something, and, so pointing, say "This exists", what one did "would not express a proposition at all, but would be absolutely meaningless".[1] Here, pointing at an object and using 'this' as the (grammatical) subject of predication was taken as a paradigm of referring to something. Within a page, however, Moore admitted that 'This exists'

---

1 G.E. Moore, "Is Existence a Predicate?", Aristotelian Society Supplementary Volume 15 (1936), 185.

must be meaningful (and without retracting his previous claim). For the meaningfulness of 'This exists' was taken as a necessary condition of that of 'This might not have existed', which, it seemed to Moore, could clearly be said with truth of any object. One suggestion he threw out on the final page to explain this, was that Russell was wrong to suppose that 'this' is used in such a sentence as a "proper name" for something with which we are acquainted (op. cit., 188).

Moore did not elaborate this idea, that in existential sentences the grammatical subject does not refer (is not a "proper name"). Perhaps there is worth to be found in wondering if the difference between existence statements and others lies not in their predicate but in their subject. For there is something very unintuitive in supposing that 'Pegasus did not exist' does not say something about Pegasus. What other grounds are there for claiming that 'Pegasus' is not a subject in (and Pegasus is not the logical subject of) 'Pegasus exists'?

In practice, the denial of logical predicatehood to the predicate and conversely of logical subjecthood to the subject in existence statements are very similar. It is only when these denials are extended to similar denials for other sorts of sentences that their difference is revealed. Geach used the denial that 'dragon' is the true subject of 'A dragon does not exist' to

illuminate the doctrine that existence is not a predicate.[2] To transform an existential statement so that the grammatical subject appears as the predicate also removes the grammatical predicate, 'exists'. For 'A dragon does not exist' becomes 'Nothing is a dragon', and 'A red rose exists' means the same as 'Something is a red rose'. In the rephrased sentences there is no longer (since Frege, at least) any temptation to suppose that the words 'nothing' and 'something' are referring expressions. We saw earlier how the quantifier (in these examples, the whole nounphrase) "belongs with the predicate". The transformation of such subjects of 'exists' into predicate expressions led Geach to say that 'dragon' in 'A dragon does not exist', and 'red rose' in 'A red rose exists' are being used predicatively (op. cit., 126, 131).

The test will come, then, when we turn to look at sentences other than those used to make existence statements. Do we, on any other occasions, wish to say that the grammatical predicate is not a true (logical) predicate, that it does not ascribe a (real) property to an object? Or do we, on other occasions, reject certain apparent subjects as logical subjects, claiming that they do not refer? We may do the former. But the answer to the latter question is immediate. We reject

---

2 P.T. Geach, "On What There Is", Aristotelian Society Supplementary Volume 25 (1951), 125-6.

apparent subjects as referring expressions by Frege's test, notably quantified expressions such as 'all land-dwellers', 'some roses', and 'nothing'.

2. Internal and External Questions of Existence

But we should not proceed so fast. A phrase may occur as a referring phrase even when it fails to refer, just as a sentence can be asserted when it is false. We should not eliminate referring expressions just because of qualms about the non-existence of various categories of object. We can distinguish two questions here. Firstly there is the ("internal" as Carnap called it) question of the existence of some members of a category, the non-existence of others. There is a prime number between 11 and 17, but there is no greatest prime number. Hamlet had a father, but no children. Secondly, there is the (philosophical) question of the membership of a category as a whole. Although there is a prime number between 11 and 17, perhaps there are (really) no numbers at all. Although Hamlet sailed to England, perhaps there was (is) no such person.

In answer to the second of these questions, I would say that the interesting categorial question is not whether such things exist, but what sorts of things they are. To say they do not exist often means no more than that we cannot kick them. In general, they do not lie in causal relations, or, at least, not in causal relations

with us. But that (meagre) piece of information is a beginning of an understanding of what a number or a fictional character is.

There might seem to be two ways that we could discover there to be, say, no facts. The analytic way, that the concept is incoherent, that something could be a fact only if it had incompatible properties. And the synthetic way, that we look and see that there are no such things. But the latter is not possible for a kind or category of things (an ultimate kind). We may discover there to be no chairs, or measurable cardinals, or facts about Pegasus. We can't discover there to be no material objects, or numbers, or facts. If the concept of <u>fact</u> is coherent, then the significant difference is between the facts there are, and those there aren't. It will still leave us wanting to know what facts are, wanting an adequate account of the concept (which might yet turn out to be incoherent).

Does this mean that there are two (or more) senses of 'exists', one at a categorial level, another inside the (or each) category? Suppose I express the fact that Macbeth only thought he saw a dagger by saying, "The dagger Macbeth thought he saw never existed". Later I express the fact that <u>Macbeth</u> is a work of fiction by saying, "Macbeth never existed". I might be supposed to mean two different things by 'exist' here, in the one case existence-in-fiction, in the other existence-in-

reality. There are two objections to this. Firstly, Macbeth's dagger did exist in fiction; but it was an hallucination, so it didn't exist. Secondly, the category difference between fictional and factual entities, expressed in the subject-terms, is sufficient to distinguish the sentences, and provides enough information for us to discover whether they are true or false, without any additional distinction of senses of the predicate ('exists'). In the one case, I am speaking of a supposedly real fictional dagger, and saying it did not exist. In the other, of a supposed historical character, and saying he did not exist. We may ask how am I speaking of x (apparently an extensional position) when x does not exist? That is unanswerable only because the argument-place 'x' is categorially indeterminate. I can be speaking of a supposedly real, that is, historical, character when there wasn't such a one, because that supposed historical character was a fictional person, or I can be speaking of a supposedly real, as opposed to hallucinatory, fictional dagger when it was indeed hallucinatory.

3. A Predicative Subject for Existence

Let us suppose for the moment that I can refer to at least some items in a category (those that exist). Are there any to which I cannot refer? Can I refer to the greatest prime number, or to Henry VIII's seventh

wife, or to Ophelia's husband? The question here is rather different from that of Macbeth's dagger. That belonged to the category of illusions and hallucinations, of which there have been any number. But the greatest prime number cannot be placed in some supra-numeral category. It is a number or not at all.

We are returned, therefore, to the original idea. Is there a way of construing internal questions of existence in such a way that we are not tempted to suppose that we are referring to items which do not exist? We can, of course, attempt to refer (use expressions referringly) by mistake. But we know quite well that there is no greatest prime, and that Henry VIII had only six wives. So that in saying "The greatest prime number could not be even", or "Henry VIII's seventh wife would have been executed", we can hardly be supposed to be trying to refer. Moreover, since such a referential use presupposes, for a truth-value for the statement, that there be a referent, such an attempt would rob a necessary truth and a strong probability of their truth. Even more so in statements of non-existence. It would be odd indeed to describe such statements as containing one expression which purports to refer to an object, and another expression either affirming or denying that that object exists. Is there some other way in which an expression of these forms - proper names and general terms with articles - can occur, other than

as a referring expression ? Geach called it a "predicative occurrence" (ibid.). Let us suppose that there is such an occurrence. What can we learn of this non-referring use of these phrases?

I will start with some terminology. I will call sentences of the form 'An F, The F or Fs exist(s)', "explicitly existential" sentences (and correspondingly, for the statements made with them). Sentences of the form 'There is an F' or 'There are Fs', "implicitly existential". Note immediately that sentences of the form 'There is the F' are not existential within the scope of my interest. We may call them locative or deictic. They can be distinguished by, for instance, the sort of question they answer. In reply to "Where is the salt?", we may answer, "There is the salt". In answer to "Are there four-legged insects?", we would reply, "There are (is a) four-legged insect(s)". ('There is the F' places the F). Of course, although I think all cases with the definite article are clearly locative, so are some indefinites. In reply to "Where are the astronauts?", we may say, "There is an astronaut". Yet this last sentence can also be (implicitly) existential. The distinction here is between uses, or readings, of sentences.

Firstly, subject-phrases in the explicitly existential sentences are moved to predicate position when rephrased in the implicit form. At the same time, those

with the definite article lose it. We paraphrase 'The infimum of the set A exists' as 'There is just one infimum of A', not as 'There is the infimum of A'. The latter must be interpreted rather differently, as pointing, and is locative. Proper names acquire an indefinite article, or similar phrase. We have, "There never was a Pegasus", or "There never was such a creature as Pegasus", but not "There never was Pegasus". In the positive form, keeping a proper name, with no article, gives a locative sentence, which is not synonymous with the original. It has been noted how the 'there is' form moves an indefinite nounphrase from sentence-initial position, where it tends to have a specific interpretation which is unsuitable under these circumstances, to non-initial, here predicate, position.[3] The converse effect is noticeable if we wish to force the (so-called) referential or transparent reading of an expression in an intensional context. Quine distinguishes between, roughly, 'I believe he saw a letter of mine' and 'A letter of mine is such that I believe he saw it'. The former is ambiguous, having both the reading of the second sentence,

---

3 See, for example, J.P. Thorne, "On the Grammar of Existential Sentences", in P. Suppes et al (edd.), Proceedings of the IVth International Congress for Logic, Methodology & Philosophy of Science (Amsterdam, 1973), 865.

and another perhaps to be rendered as 'I believe some letter or other of mine is such that he saw it'.[4] (Here non-initial position is not necessarily predicate position since there is an embedded sentence.) So we can see the implicitly existential form as giving a naturally non-specific interpretation to (grammatical) subjects of existence.

Secondly, such a use in predicate position in the implicitly existential sentence, a truly predicative use, fits in with the possibility of "whoever" or "whatever" paraphrases for these expressions. That paraphrase construes such a sentence as 'The author of Waverley also wrote Marmion' as 'Whoever was the author of Waverley (whoever wrote Waverley) also wrote Marmion'. Similarly with our existential examples. We can say "Whoever Pegasus was (or was supposed to be), he never existed", and "Whatever is the infimum of A, it exists".

Thirdly, we may note how the 'there is' form is the classical reading of the existential quantifier. We can show the nounphrases in our explicitly existential sentences logically to be quantified expressions by the negation-argument of Frege's. As we noted in talking of predicate position, the definite article gives way under the move to the implicit existential. Correspondingly,

---

4 W.V. Quine, Word and Object (Cambridge, Mass., 1960), 140, 147.

when negating 'The King of France exists', it is odd to say, "The King of France does not exist". Much preferable is "No King of France exists", or "There is no King of France". The contradictory of 'There is a golden mountain' is 'There is no golden mountain', and this is the only way to interpret the barely acceptable 'There is not a golden mountain'. In the same way, the denial of 'John fought a lion' which uses 'John didn't fight a lion' is, unless a specific lion is intended, interpreted as 'John fought no lion'. Here the negative does not attach to the main verb, but to the determiner. The phrases 'a golden mountain' and 'a lion' occur non-referringly.

A fourth characteristic is the relevance of 'such as' phrases. The definite article is replaced and a proper name preceded in the implicit existential by the modifier 'such a' or 'such a thing as'. 'There is such a golden mountain' and 'There is no such thing as the King of France, or Pegasus'.

These four points, the move to predicate position, the 'whatever' paraphrase, the functioning as quantified phrases, and the 'such as' modifier, constitute recognisable characteristics of what Donnellan called an "attributive use" with respect just to definite descriptions.[5] I earlier added the first and third character-

---

5 K. Donnellan, "Reference and Definite Descriptions", Philosophical Review 75 (1966), 281-304.

istics to Donnellan's emphasis on the second, and extended the distinction between attributive uses and referential ones to indefinite nounphrases and proper names. So the answer to the puzzle about the apparent reference to what was denied to exist (or even, affirmed to) is that these phrases do not occur referentially, and do not refer, but occur attributively. Normally when a definite or indefinite nounphrase ⌜+ A⌝ occurs attributively in ⌜(+A) ϕ s⌝, we can paraphrase it as ⌜Whatever is A ϕ s⌝. Sometimes this means ⌜There is an A which ϕ s⌝, at other times ⌜All As ϕ⌝ . But when such a term occurs in ⌜(+A) exists (or doesn't exist)⌝, we have a degenerate form, yielding simply ⌜There is (or is not)(such a thing as) +A⌝.

In much the same way, in Russell's theory of descriptions (in many ways an accurate account of the attributive use), 'The F exists' is a degenerate form of 'The F ϕ s'. The latter is rendered as '$(\exists x)((\forall y)(Fy \leftrightarrow x = y) \& \phi x)$', the former as '$(\exists x)(\forall y)(Fy \leftrightarrow y = x)$'. Moore's second point of difference between 'growl' and 'exist' was that 'Some tame tigers growl' asserts that something is a tame tiger and growls, whereas 'Some tame tigers exist' does not assert that something is a tame tiger and exists, but that something is a tame tiger (op. cit., 123).

We can generalise the point. We cannot refer to those things (of such and such a sort) which do not exist.

For if we did refer to them, we would have referred to something of this sort which did not exist. So we would have referred to something for which there is no such thing. In which case we would have referred to nothing, and so, in failing to refer to anything, would not have referred at all. Reference is extensional.

We now answer one of our earlier questions by saying, perhaps gauchely, that we can never refer to those members of a category which, in answer to an internal question, don't exist. Phrases such as 'the greatest prime number', 'Henry VIII's seventh wife' and 'Ophelia's husband' in sentences which succeed in making statements can occur only attributively. 'Exists' restricts its subject to an attributive use. It is not predicated of a subject of reference.

4. Reference and External Questions

It is an entirely separate question whether there are any categories to whose members we can never refer. The above criteria for distinguishing referential from attributive uses or occurrences might seem to lead us to an affirmative answer to this question. We can clearly refer to numbers. We can distinguish 'Whatever number is the number of the planets, it is greater than 8' from 'That number which is in fact the number of the planets (namely 9) is greater that 8'. The former is only contingently true, the latter necessarily so. But it

would seem that one class of expressions which does not allow this distinction is that of the propositional objects, 'the fact that John told us', 'the rumour that there are material objects', 'the proposition that France is hexagonal'.

However, there is a sleight of hand here. The first of these is ambiguous. The 'that'-clause may be a specification of the content of the fact, or it may be paraphrased as 'the fact which John told us', that is, be a contracted restrictive relative clause. Of course, if we say precisely which fact or rumour it was by giving its content, where the succeeding noun-clause is not a relative clause, we cannot fail to refer to it. Just as if we say who in fact murdered Smith, we cannot make sense of then speaking of whoever murdered him (in the same breath). But if we use a relative clause to determine which fact or rumour it was, we may then be speaking only of whichever fact or rumour is so determined.

I argued in the fourth chapter that referring expressions are derived from non-restrictive relative clauses. When 'the murderer of Smith' occurs referentially, it is derived from 'he (or that man), who murdered Smith'. Since the 'that'-clause in ⌜the fact that p⌝ completely specifies the content of the fact, that is, says which fact it is, one cannot distinguish ⌜whichever fact it is which is the fact that p⌝ from

⌜that fact which is the fact that p⌝, in the way that one can distinguish 'whichever fact it was which John told us' from 'that fact which, as it happens, John told us'. Put in these terms, it is clear that the content-specifying 'that'-clause functions for the head-noun 'fact' in just the same way that the non-restrictive clause 'who murdered Smith' functions in determining and indicating which man is being referred to. In which case we can conclude, firstly, that all explicit fact-clauses (⌜the fact that p⌝) are derived from non-restrictive relative clauses, and, secondly, that such clauses can only be used referentially.

Nominalised sentences such as 'John's being a fine cook', 'every elephant's growing tusks', 'the witness's sincerity' and 'an explosion at the gas works' raise the same problem. The first two disallow the distinction, for they again wear their content in the open. Yet once we have a general term for, say, John's abilities or an elephant's dispositions, we can so distinguish between the abilities John in fact has, and whatever abilities he may have. So we can refer to his abilities. If John has no ability as a cook, then we cannot refer to his being a fine cook. The second pair are much less close to any sentential source, and in fact to find a transformational derivation of them raises untold problems. We can immediately distinguish what sincerity the witness has, from a consideration of however much

he may have.

Once again, we find no reason to suppose there is any category to whose members we cannot refer. While finding also that in any category it is possible to refer only to those of its members which exist.

Chapter Eight: Meaning and Predication

1. Predication and denotation

We saw, in the fifth chapter, how from the notion of predication, we can derive that of denotation, where predication may be intensional, denotation necessarily extensional. Hence predication is the prior notion, for the extension of a predicate does not uniquely determine any one predicate. The denotation of an expression is that class of things of which the predicate can be truly predicated. If s is a token of ⌜a is P⌝, and, as used in s, a is a referring expression and refers to m, then m is denoted by the predicate P if and only if s is true.

Substantival expressions such as 'a man' and 'the man' have a dual role. While they can be used predicatively to ascribe a property or set of properties to an object, they can also be used referringly to pick out an object, for another predicate to describe. This object picked out will often, but not always, be denoted by the phrase. That is, in some other sentence, the phrase could be truly predicated of it.

Expressions such as 'red', 'literate', 'human' do not exhibit these two uses. They do not have this referring role in identifying objects, but are used only

predicatively to characterise or apply to things already picked out. For some such items one can speak of a determinate extension - those things which are literate. For others, one cannot - they do not provide a criterion of individuation, and there is no set of, for example, red things. All those things which are literate are men, which provides the sortal. So that, as Anselm put it,[1] 'literate' signifies directly a quality as such, but it also signifies indirectly, or denotes, a substance, something that can be individuated or grouped. We should therefore expect to restrict our talk of denotation to those expressions with a determinate extension.

2. Four Conceptions of Meaning

By contrasting the intensionality of predication with the extensionality and semantic vacuity of reference, we should begin to see the traditional distinction between meaning and reference in a new light. For our purposes, we can pinpoint four distinct notions which all lie behind current conceptions of meaning.

Firstly, there is the traditional notion of a universal: whatever (non-linguistic) is "said of" a number of individuals when some common noun is predicated (linguistic) of them. It might, on occasion, be supposed

---

1 See D.P. Henry, Commentary on 'De Grammatico' (Dordrecht, 1974), 203-8.

to be related one-one with, even referred to by, the common noun. Such a notion of meaning is restricted to nomina - nomina substantiva et adiectiva, nouns and adjectives.

At the furthest extreme from this lies the second notion: that of the use of an expression. Every expression has some role to play in the sentences in which it occurs. But we might hesitate to isolate a corresponding universal lying behind 'if', 'in', or 'the'. Moreover, as Austin remarked, not only do sentences have many uses, those uses themselves are manifold and disparate. Not least, sentences have both meaningful and non-meaningful uses. To use a phrase with its normal meaning is just one way of using it.

Between these two extremes, we can discern two other notions of meaning. There is that of the content of an expression. I used this form of words in earlier chapters in speaking of one use of definite descriptions. In one way of using the description, I said, its content is relevant to determining the truth-value of the sentences in which it occurs, and I called this use an attributive or predicative one. With certain predicates this is all we say. The predicate does or does not apply to whatever is determined by the content of the definite description. But other predicates connote reasons. That reason may or may not be given by the content of the description.

1/ The Queen of Thebes was Oedipus' intended

has such a predicate. As Queen of Thebes, Jocasta was she whom Oedipus intended to marry; as his mother she was not. While 1/ is true,

2/ His mother was Oedipus' intended,

which appears to follow from 1/ by a substitution under identity, is not. Yet it is false only if the description is being used attributively here. The content of subject and predicate expressions was taken as a central notion by those logicians of the last century whom Frege referred to as Logiker des Inhalts - intensionalist logicians.[2] The judgment expressed by a declarative sentence consists, for them, of the contents or concepts of its two parts. But the predicate expresses "a more variable part of the judgment", in that we can predicate different things of an object retained constant. I take it that what was meant by this was to salvage their theory from consigning all descriptions to an attributive use. It is sentences with attributively

---

2 G. Frege, "Ausführungen über Sinn und Bedeutung", in H. Hermes, F. Kambartel & F. Kaulbach (edd.), Nachgelassene Schriften (Hamburg, 1969), 128-9. The brief quotation which follows is from W. Wundt, Logik (Stuttgart, 1880), Vol. I, 141.

used subjects whose truth-conditions consist in relating the contents of the two (predicative) parts. The predicate is "more variable" in that we can consider an object regardless of how referred to or described. To consider a predicate, we can consider it only as applied to an object.

Such a notion, of a predicate containing an incompleteness, requiring filling by an object, brings us to our fourth notion of meaning, that of Fregean sense. Frege treats both the reference and the sense of a predicate expression as incomplete (op. cit.).[3] One of the main difficulties in understanding Frege is to distinguish the sense from the reference of an incomplete expression. The Fregean notion of sense combines two features. Firstly, it provides a molecular, that is, functional route to revealing the thought, the content, expressed by a sentence. To this extent, it yields a further development of the notion of content, what is expressed by a sentence and its parts when the sentence is used to make, for example, a judgment. It also encapsulates a concept of use. The sense of an expression is what a speaker knows when he knows how to use the expression (correctly). When treated in this way, the sense becomes a route to the (Fregean) referent. When the

---

3 Also "Compound Thoughts", in E. Klemke (ed.), Essays on Frege (Urbana, 1968), 541.

speaker knows how to use an expression, he knows how to determine what is its referent.

It may be that we can adequately capture what it is to know a language as understanding its semantics - knowing the truth-conditions of its sentences. But Frege puts the cart before the horse. He characterises sense epistemically (as the information content of an expression, as precisely what someone knows who can use the expression), and then proceeds to use it as a primitive in his semantics. I wish to proceed in, if any, the opposite direction. I wish to characterise meaning or content entirely in terms of the truth-conditions of sentences, with no mention of knowledge or use. Only then would it be profitable to attribute knowledge of the meaning to a speaker. In fact I shall make use of opaque contexts (which include epistemic ones) so to characterise meaning. But that is very different from giving a privileged place to one extra-theoretical epistemic term, 'knowledge'.

3. Meaning as Intensional, but not Epistemic

When a predicate is applied to an object, the result is true if and only if the object and the content of the predicate are related in the appropriate way. It might be thought that the appropriate relation is that the object should fall under the (Fregean) concept determined by the sense expressed by the predicate. In

other words, to treat the concept, the referent of the predicate, as the content of the predicate. To do so is, however, to lose the intensionality of the notion of content. For Fregean concepts are extensional. (The second-level analogue of) identity holds between two concepts if and only if just the same objects fall under them. So that concepts, in this sense, taken alone, are unfitted for the expression of meaning.

What is needed is a notion of content which performs the functional, or molecular, role of Fregean sense and concept without either the epistemological aspect of the one or the extensionality of the other. This we can develop from the attributive use of expressions which we have explored earlier. We recalled earlier in this chapter how the denotation is logically posterior to predication. It is similar to a Fregean concept in robbing a predicate of its capacity for intensionality. The relevance of a predicate to the notion of meaning resides in its capacity for an intensional use. In meaning we are interested in the application of a predicate to an object. As such, that application may depend on how the object is presented. And here, application is a metaphor which must be spelt out in terms of the truth of sentences.

4. The Meaning of Intensional Predicates

Firstly, let us look at extensional predicates. We

can consider three types of predicate, constituted respectively by nounphrases, adjectives, and verbs, ⌜is + N⌝, ⌜is A⌝, and V where '+' abbreviates all Johnson's applicatives, together with oblique cases expressed by prepositions and suffices (for example, the genitive). Then we can say that the predicate in each case applies to the object m if and only if, if the nounphrase a refers to m, ⌜a is + N⌝, ⌜a is A⌝, aV is in each case true. We may go further and speak of a property ascribed by the predicate to the object by its application to the object. The object has that property if and only if the predicate applies to the object. One reason for the move to properties is to deal with synonymy. We can now, on occasion, speak of the same property being ascribed by several different predicates, for example, 'smokes' and 'is a smoker'. Properties are essentially no more abstract than predicates. Just as a property is what is ascribed by one or more predicates to an object, so a predicate is what is attached to one or more names in a number of (token) sentences (speech acts of some sort).

Of course, if we wish to restrict ascription of the same property just to synonymous predicates, then we need to introduce intensionality into the analysans. So we turn to consider such predicates as 'is Oedipus' intended', which connote a reason for their application, that is, which apply to an object under one description

but not under another. Thus, while the sentence

3/ Jocasta is Oedipus' intended

is true, given a referential use of 'Jocasta', we cannot say whether 2/ is true simpliciter. We need, firstly, to specify whether 'his mother' (or 'Oedipus' mother') is being used referentially or attributively. It is only when the subject-phrase is used attributively that it connotes a reason which can be treated as relevant to the application of the predicate. When it is used referentially, the subject-phrase simply presents an object, for which purpose any other phrase referring to that object would do. That is, the object is presented for the application of the predicate not under any particular description, but in general any other device for doing the same job would do as well. So that, if 'Oedipus' mother' is used in (some utterance of) 2/ to refer, then, since 3/ is true, so is 2/. But the phrase may be used attributively. An attributive use of a nounphrase in subject position is, we saw, a predicative one, that is, a use ultimately to be explained in terms of a use of that phrase in predicate position. We can put it this way: if 'Oedipus' intended' applies to something in virtue of some reason connoted by that predicate, then there must be some description of the object (other than this) under which the predicate applies to it. However, although we can then say that the nounphrase presenting the object under that description must, since it is

presenting an object under a description, be being used attributively, that object can be picked out regardless of description by that, or any other, phrase used referentially, and therefore the predicate applies to that object. It is this sense of the predicate's applying to the object which would be called transparent. In the opaque sense, it applies to it only under some descriptions and not others. To express this we need to say that there is some description and some object such that the object as falling under this description satisfies the predicate. (This is what we did in the final section of the fourth chapter.) That is, if 'Oedipus' mother' occurs attributively in 2/, then 2/ is true if and only if there is some object which is both Oedipus' mother and (as such) Oedipus' intended - which is false. What is true is that there is some object which is both Queen of Thebes and (as such) Oedipus' intended, and so 1/ is true.

In those cases where the application of the predicate depends on how the object is presented, we can say that the same property is ascribed by those predicates which apply to the same object under the same description. Then the notion of property gives us that notion of content or meaning for which we were searching. Furthermore, the way in which we have constructed the notion shows us how and when we can speak of the content of the subject-expression: just in those cases where the

subject occurs attributively, or predicatively.

5. Meaning as Truth-Preservation in Opaque Contexts

However, this gives us the meaning only of intensional predicates, those which have opaque readings or occurrences. We need to spell out how it is to be extended and generalised both to extensional predicates, those which, applying to an object under one description, apply to it under any other (Geach's "Shakespearian predicables" such as 'is a man'), and to expressions other than predicates, such as nounphrases in subject position, components of complex predicates, and so on. (One particularly notable case ommitted in what follows is that of mass-terms.) How, then, do we capture the meaning of such a predicate as 'is a man'? One might be tempted to introduce the intensionality by a constant fixed opaque operator. For example, to say that two predicates mean the same if and only if every normal speaker believes, or even knows, that they apply to just the same things. But here 'normal' will need to contain and hide a pleonastic caveat: every speaker who knows the meanings of the terms will have this belief or knowledge. A more promising approach within the present framework is to look at subject-terms first. In 2/, the subject-term contains no intensionality, but it is used within the opaque context '... is Oedipus' intended'. The truth-condition is that there be something which is both

Oedipus' mother and, as such, Oedipus' intended. The phrase 'as such' here can give us what we want. For as his mother, Jocasta is not Oedipus' intended. As the Queen of Thebes, she is. So the phrase 'Oedipus' mother' describes Jocasta in a way different from that in which 'The Queen of Thebes' does. It expresses a different content. We can say, therefore, in general, that the same property is ascribed (the same content is expressed) by those nounphrases which, when used attributively, may be substituted salva veritate in all contexts, that is, importantly, in opaque ones.

An immediate objection is that there are some contexts in which even intuitively synonymous expressions are not substitutable salva veritate. One such case is suggested by Linsky.[4] He intends to show by it that Frege's attempted solution to the substitutivity problem of opacity by providing the customary sense as the oblique referent leads to the conclusion that no two singular terms have the same sense. Consider

4/ Jones denied explicitly that t = t'.

If substitution is limited, either by my approach or by Frege's, to synonymy, then the assumption that any two expressions, t and t', are synonymous allows the inference immediately from 4/ of

---

4 L. Linsky, Referring (London, 1967), 34; see also L.J. Cohen, The Diversity of Meaning (London, 1962), 176.

5/ Jones denied explicitly that t = t.

But it would appear that 5/ can be false when 4/ is true.

I argued in the fifth chapter that '=', the identity sign, is used in the logical representation of natural language sentences to indicate a referential use of the expressions lying on either side of it. It follows that if t and t' are here coreferential, in a sense a weaker requirement than that they be synonymous, substitution is permissible. However, sameness of sense does not guarantee that two signs are used to refer to the same object; one or other of them may be being used misreferringly. What does follow is that we need to draw a particular example from Linsky's schema, and to replace in it his use of '=' by the copula. We can then consider an attributive use of one or other of the terms t and t', where its sense is relevant to the inferential relation of 4/ and 5/.

When we do look at an example, we see that Linsky's case is implausible.

6/ Jones denied explicitly that the author of Waverley was the person who wrote Waverley,

7/ Jones denied explicitly that the author of Waverley was the author of Waverley.

In a report in indirect speech, as opposed to direct

speech, we are not restricted to the very words of the speaker (cf. Linsky, op. cit., 114). This is evident when reporting an utterance in another language. But it is also true within one language. Nor does the expression 'explicitly' restrict the reporter to the reported speaker's words. One can correctly say: "Jones said explicitly that Scott was the author of Waverley" when reporting Jones' utterance of, say, "Scott wrote Waverley".

Suppose Jones said, "The author of Waverley did not write Waverley". If the subject term was here used referentially, to pick out Scott, this utterance could express a sensible claim, to the effect that the person who had always been believed to have written the book did not. Jones' utterance could then be reported by either 6/ or 7/, but with the phrase 'the author of Waverley in subject position in the embedded sentence again used referentially. Then no problems of non-substitutivity arise. They arise only if that phrase is used attributively in 6/ or 7/, so that Jones is reported to have said something to the effect of (though these need not have been his actual words), "The author of Waverley was not the person who wrote Waverley", where the subject-term is used attributively. In such a case the truth of 6/ is just as implausible as that of 7/. We would normally credit someone who said something (not merely mouthed it) with understanding the meaning of

his words.

Even if we look at an example where such knowledge might not be expected, for example,

> 8/ Jones denied explicitly that a dicotyledon was a plant whose embryo has two seed leaves,

all that follows is that indirect speech is an unsuitable medium for the reporting of errors in understanding. In reporting speech <u>indirectly</u> we are allowed to report within the limits or paraphrase and synonymy. It is precisely this that I am relying on in taking opaque contexts to delineate my formal notions of meaning and synonymy.

We can now proceed to full generality. For until now we have dealt only with atomic sentences, those resolving directly into fairly simple subject and predicate. Given an opaque context of the relevant sort, that is, one allowing completion by an expression of the respective category, and such that substitution of expressions with the same denotation does not preserve truth, we may say that two such expressions have the same content if and only if their mutual substitution <u>does</u> preserve truth. An example: on the one hand 'gave birth to Oedipus' and 'Oedipus' mother' have the same denotation, that is, for all x, ⌜x gave birth to Oedipus⌝ is true if and only if ⌜x was Oedipus' mother⌝ is true (where any expression '<u>m</u>' in the metalanguage substituted

for 'x' is used referentially). Moreover, these expressions can be mutually substituted salva veritate in all contexts, opaque or not. So they are synonymous. On the other hand, while 'cordate' and 'renate' have the same denotation, that is, for all x, ⌜x is cordate⌝ is true if and only if ⌜x is renate⌝ is, since it so happens that all creatures with a heart have a kidney, the two expressions cannot be mutually substituted in all contexts. 'It is necessary that whatever has a heart is cordate' is true, while 'It is necessary that whatever has a heart is renate' is not.

6. Meaning a Predicative Notion

This generalises the notion of content to all predicates (extensional and otherwise) and to nominal, adjectival and verbal components of predicates. It leaves us perhaps with the question of whether there is any useful notion of meaning or content to be spelt out for other parts of sentences - conjunctions, prepositions, adverbs and so on. Such a question returns us to my original contrast between theories of meaning as use and those of meaning as universals. A number of times I have spoken of "what is said" by a sentence. We saw, at the end of the fifth chapter, how we could follow Russell in reifying the truth-condition into a proposition or statement. Two sentences whose truth-condition is the same can be said to state or mean the same thing. The

atomic subject-predicate sentence form in terms of which the others have been analysed is ⌜S (is) P⌝, where S is a nounphrase, and P is either that, or an adjective, or (without the copula) a verb. Here P is used predicatively. That is why we call one use predicative. S, however, can be used either referentially or predicatively (attributively). If we concentrate on the former, we recall that the truth-condition is: ⌜S is P⌝ is true if and only if, if on this occasion S refers to m, P can be truly predicated of m. Our earlier discussion then glosses this final clause as '... m has the property ascribed by P', that is, 'P applies to m'. It follows that the present notion of content or meaning applies fundamentally to a subject-predicate statement. Other more complex statement-making sentences are analysed in terms of the atomic categorical sentence. To account for these, we may need to go on to make general remarks about the meaning or content of nounphrases, adjectives and verbs. We do not need to assign a separately identifiable meaning to other particles, such as conjunctions, prepositions and articles.

Other notions of meaning may find it useful, or even necessary, to do so. We speak of the meaning given implicitly to the logical connectives by their role in the inference of a formal system. Any function sign δ which enters into the rule

$$\frac{A \qquad B}{\delta\,(A,B)}$$

has the meaning of the connective 'and'. The corresponding elimination rule follows from this being the sole introduction step. Similarly, a meaning (that is, a use) is given to the preposition 'on' by its several appearances in the truth-conditions of different sentences.

The point is a generalisation of the situation obtaining in a simpler form in the Tarskian semantics for first-order logic. Before the recursive clauses of the truth-definition can be applied,it is necessary to specify a denotation for the individual and predicate constants, to assign then respectively to members of, and to subsets of Cartesian products of, the domain. If the truth-definition were to be intensional, this assignment would itself need to be intensional, rather than to specify for each term its extension (denotation). Only when this has been done can the truth-value of the various sentences, under this interpretation, be given. Doubtless the recursive clauses and their operation implicitly define a meaning for the expressions &, ~ , $\forall$, and so on. The point of looking at only those interpretations which satisfy the truth-definition is to give a meaning to the logical constants, to make them match the corresponding expressions of the metalanguage (English). But they are not assigned a denotation (in this way of doing things), nor would they be assigned an intension in an intensional semantics, and they do not

express a content.

7. Conclusion

My point is that the notion of meaning needed by the programme of semantics is that of content outlined above, and not any of the other notions lying more towards the analysis of meaning as use or function. There are two reasons for this. Firstly, in that only these expressions possess a denotation, and so express an intension (of that denotation). Secondly, because there is no need for, nor indeed room for, epistemological notions in semantics. I will close this chapter by defending the first of these claims. The second will be the subject of the next chapter.

Consider

9/ His mother's body is on her bridal bed.

In order to discover the denotation of the phrase 'on her bridal bed' (or 'on his mother's bridal bed'), we do not need to consider any separately identifiable meaning of the preposition. Nor do we need to separate out the terms 'mother', 'bridal' and 'bed'. But the latter are separated out by their separate predicate occurrences, 'is bridal', 'is a bed', 'is his mother's'. It is the manifold of these occurrences which identifies anywhere, if needed, the intension of 'on his mother's bridal bed' (rather than simply its denotation), as is needed in an analysis of, say,

10/ Being on his mother's bridal bed
was abhorrent to Oedipus.

That may have been; being on that of the Queen of Thebes was not. Doubtless the manifold of uses of the preposition in such sentences also implicitly defines a meaning of the preposition 'on'. Such a meaning does not play the same role in the statement of the truth-conditions as does the notion of content I have given above.

Meaning is linked to predication as reference is linked to the notions of subject of predication, and that about which one speaks. One needs a notion of meaning simply for those clauses in the truth-definition where one speaks of 'truly predicable of'. Even here, one needs it only for opaque contexts. Indeed, meaning and opacity lie together. Each is needed for an elucidation of the other. Quine would doubtless call this vicious, as he objects to the interdependence of meaning, synonymy, analyticity, and so on. But this interdependence is entirely virtuous and predictable. Intensional notions cannot be explicated extensionally - if intensions are to be different in kind from extensions. The meaning of an expression A is what is common to all expressions B mutually substitutable for A salva veritate. So any context which does distinguish expressions A and B with the same denotation both will show A and B to differ in meaning, and will be opaque - the mutual substitution of A and B will not be truth-preserving.

Chapter Nine: Sense and Content

1. Dummett's Flight from Realism

Michael Dummett has recently, repeatedly, and ironically, defended Frege in his distinction of sense from reference, in particular in the importation into semantics of an element of what is known. Ironically, in that Dummett is clearly committed, through this epistemological importation, to an intuitionist view of logic, sharply contrasted with Frege's realism.[1]

Dummett suggests most recently that his position is not in fact intuitionist. "It stands on the other side of a [realist] theory of meaning ... from a verificationist theory" (WTM II, 126). For the intuitionist accepts $p \rightarrow \sim\sim p$, and rejects $\sim\sim p \rightarrow p$. Dummett argues that 'incorrect' wears the trousers in a

---

1 M. Dummett, Frege: Philosophy of Language (London, 1973); "What is a Theory of Meaning? (I)", in S. Guttenplan (ed.), Mind and Language (Oxford, 1975), 97-138; "What is a Theory of Meaning? (II)", in G. Evans & J. McDowell (edd.), Truth and Meaning (Oxford, 1976), 67-137; and other places. I will use the abbreviations 'WTM I' and 'WTM II' in an obvious way.

description of the linguistic act. He therefore replaces classical (realist) truth with falsification (can know to be false), rather than with verification (can know to be true), and so finds himself accepting the latter entailment, and rejecting the former. I will, however, use 'intuitionist' to cover Dummett's position without, I think, any ill consequences.

Dummett characterises realism as the view that "every statement is determinately true or false", that is, as the espousal of (what he calls) the Principle of Bivalence. This appears at first sight a rather unorthodox characterisation of realism. A more immediate one would be the claim that for every statement there is something in virtue of which it is true or false. But bivalence lurks in that final clause: given that for every statement there is such a feature of the world in virtue of which it is either true or false, then every statement is indeed either true or false.

Dummett elides the supporting correspondence claim because he himself clings to it. It is precisely because he denies that for every statement there is such a corresponding feature, while requiring for truth or falsity that there be, or not be, one, that he is led to deny bivalence to certain statements. For every statement which <u>is</u> true, or as he puts it, correctly assertible, there really is some thing in virtue of which it is so.

We see this in his consideration of

1/ X is good at learning languages,

given as a counterexample to Bivalence (WTM II, 90). For if X dies after a life of monolinguistic isolation, there is, Dummett claims, no way of telling whether he was good or bad, and so no reality in virtue of which it would be correct to assert that he was. In that case, 1/ is not known either to be true or to be false, and thus neither is it correctly assertible nor is its negation. So for Dummett, a statement is true (correctly assertible) if and only if there is some effective means of verification in virtue of which it can be recognised to be true.

A notion of the bare truth of certain sentences is seen by Dummett as a background to the realist view: a sentence S is barely true only if there is no set of sentences none of which is a trivial variant of S for which the truth of each member entails the truth of S. That is, if S is barely true then every set of sentences the truth of all of which entails that of S contains some trivial variant of S. The realist, claims Dummett, is committed either to asserting the bare truth of certain sentences, such as the de facto counterfactual conditions of 1/, or to reducing such sentences to others whose truth-conditions are determinate.

The latter reduction is often physicalist; but, against Dummett, there is a way of understanding counterfactuals which gives them determinate sense, and also

justifies a non-reductionist assertion of bivalence for them. Dummett claims that, of any random pair of subjunctive conditionals, that is, a pair differing only in that the consequent of one is the negation of the other, "we cannot in general assume that one or the other must be true" (WTM II, 93). We can: consider in general

2/ If it were Φ , then it would be Ψ .

where Ψ is indicative (if not, the argument must be reiterated through the complexity of Ψ). We consider that state of affairs which differs from our own solely in its being Φ , and in ways consequent upon that assumption. In that world either Ψ holds or it does not. For Dummett supposes that bivalence breaks down only for undecidable sentences (those whose truth-value cannot be effectively determined), and suggests that undecidability is introduced mainly by counterfactuals, quantification over infinite domains, and reference to inaccessible regions of space-time. The present discussion has taken a counterfactual as a test case, so we can rule out for the present the other two possibilities for the loss of bivalence for Ψ . Yet we have also *ex hypothesi* that Ψ is not a counterfactual. We may therefore assert its bivalence. But if its being Ψ or not does not depend solely on its being Φ , that is, the truth of the remark depends on the coincidence of Φ and certain features which *are* factual, then there must be other features, χ ,

of that state of affairs in which Φ holds which determine it to be Ψ (or not to be). These features χ are features of the actual world, of reality, since that considered differed only in being Φ. It may be that we could determine whether χ hold or not (and it may not be); but even if we did know that it was the case that χ, there is no reason to suppose that we could discover that Φ and χ conjoined would indeed determine Ψ. Hence any such pair of conditionals does exhibit bivalence in the required respect, despite the fact that we might not be able to determine either disjunct.

Consider Dummett's example: he supposes that 1/ is true if an only if

> 3/ If X were to attempt to learn a language, he would quickly succeed

is true. (For the realist, 1/ and 3/ are not equivalent. 3/ simply yields evidence for 1/, but not conclusive evidence. For Dummett the truth of 1/ consists in that of 3/.) So if X were to attempt it, there would be other features χ of the situation in which he did so which are both features of our situation and such that his attempting and χ together lead either to success or failure. Suppose χ_1 are those leading to success, χ_2 those determining failure. Then 3/, and hence 1/, is true if and only if χ_1 are features of this world. Unless one thinks that all features are physical, χ_1 need not be physical features. Yet there is no reason to suppose

that we could recognise any particular features ζ to be those features χ_1, even though we might be able to verify that ζ obtained. 'χ_1' is not the truth-condition given in the semantics. 'ζ' is the truth-condition; 'χ_1' is here used attributively to mark out whatever features determine ψ (viz. language-learning success). We must indeed be capable of knowing what the truth-condition of a sentence we understand is, even though we may have no effective way of telling that it is satisfied.

Sentence 2/ then was the base case for an induction, whose induction step is obvious. We see that the bare truth of a counterfactual is compatible with its bivalence, with our understanding of its truth-condition, and with our not being in a position effectively to determine its truth-value.

We may still wonder, however, what drives Dummett to his anti-realism. For given his acceptance of the correspondence principle C, and his realisation that there need be nothing which would, however much we know about what is in fact the case, enable us to recognise that such a statement as 1/ is true or is false, he can only avoid a theory of bare truth for such a sentence by rejecting the law of bivalence for undecidable sentences. Why then does Dummett feel that counterfactuals, and other such ushers in of undecidability, cannot be barely true?

A clue is given by his remarks about past tense sentences (one example of undecidable claims about inaccessible regions of space-time). He says, I would understand *in propria persona*, that "we are inclined to think of statements in the past tense as being rendered true or false by a reality ... which is in some sense still there; for if there were, as it were, nothing whatever left of the past, then there would be nothing to make a true statement about the past true, nothing in virtue of which it would be true" (WTM II, 98-9). An immediate reaction is to suggest that the correspondence principle should not be read so naively. Of course there is nothing in virtue of which a true past tense statement is true; but there *was* something in virtue of which it *is* true.

But Dummett has a reason for reading the existential of the correspondence principle in the present tense, and this is indeed the core of his flight from realism. He construes all knowledge as perceptual, in the sense that the knower and the known must be together at the same time in the same place. His paradigm of knowledge is that given by observation - observation is, he supposes, extended by the realist, *per impossibile*, to a superhuman observer for whom the petty ("purely medical") limitations of undecidability would not hold. It is the Platonic caricature, that we find in, say, Gödel, of realism as requiring a form of direct transcendental

acquaintance with objective entities as the only firm foundation for the knowledge of objective truths, which drives Dummett into idealism. Again and again we find him characterising realism in terms of a superhuman observer for whom the problems of undecidability are overcome by his directly perceiving the answer all at once. "We cannot form any conception of what a faculty for direct recognition of counterfactual reality would be like" (WTM II, 100); "to be able to [apprehend the truth of past tense statements directly] would be to be capable of observing the past as we do the present, that is, to be able to survey the whole of reality from a position outside the time-sequence" (99); we "appeal to a hypothetical being who could survey infinite domains in the same manner as we survey finite ones" (99).[2] He supposes that the bare truth of an undecidable sentence requires transcendental observation.

This is not to say that Dummett believes no

---

2 See also "Truth", Proceedings of the Aristotelian Society 59 (1958-9), 161; "Wittgenstein's Philosophy of Mathematics", Philosophical Review 68 (1959), 324-5, 327; "The Reality of the Past", Proceedings of the Aristotelian Society 69 (1968-9), 252-3; "The Philosophical Basis of Intuitionistic Logic", in H. Rose (ed.), Logic Colloquium '73 (Amsterdam, 1975), 20-1; Frege, 465-6, 517, 589.

statement ever to be indirectly verified - that every truth is observed to be true. He certainly allows that observation very often plays the role only of initiator of an inferential process. Nonetheless, it is indicative of his objection to realism that whenever he purports to explain the realist's reasons for accepting bivalence for undecidable sentences he uses such metaphors of observation and perception. In particular, there is his tendency to equate realism in mathematics with Platonism. For what is most noticeable about, say, Gödel's Platonism is precisely his description of our knowledge of certain truths, in particular the self-evidence of the axioms of mathematics, as resulting from "a kind of perception", a mathematical intuition.[3]

Consider such a claim as that there is a string of five consecutive sevens in the expansion of π . For the realist there is an (actually) infinite decimal expansion of π , and in that expansion either there is or there is not such a string of sevens. But the realist's grounds for claiming this do not (necessarily) depend on his supposing that there is, or could be, some superhuman observer who could survey the whole expansion, nor on our having any particular intuition about the expansion. There is a procedure whereby the expansion

---

3 K. Gödel, "What is Cantor's Continuum Problem?", in P. Benacerraf & H. Putman (edd.), Philosophy of Mathematics (Oxford, 1964), 271-2.

can be calculated; but the procedure can never be completed. If there is a string of five sevens, then the procedure can produce it; if there is not, the procedure will not produce one. Here the role played in the case of counterfactuals by the actual state of affairs χ is taken over by the procedure of calculation. But just as there we might never know what the determining conditions for X's bravery or language mastery (or lack of them) are, so here we may never know whether the procedure has the property of producing the sevens or not.

So Dummett seems to hold that a counterfactual's being barely true is possible only if some being could observe that counterfactual reality directly. But, as Kripke pointed out, a possible world is not a <u>distant</u> world which we (or at least someone with the requisite powers of intuition) could observe through a metaphysical telescope. It is an alternative to this world, one defined precisely by the counterfactual hypotheses made about its differences from and similarities to this one. So we can know what is the case in that counterfactual reality only by considering what would happen if things were different, and other things similar, in this one. In our example, we must decide whether X is good at languages either by actualising the state of affairs in which he tries to learn one (the direct way) or, if that is not possible (the antecedent of the conditional

is counterfactual), by considering what is the case, and what evidence there is available for assessing his abilities. The defence earlier of the claim that he either is good or not is indeed a detailing of how we would decide the issue, but it is not an elaboration of the truth-condition of his being good. The truth-condition of 1/ is not the subjunctive conditional: it is his having a certain ability. We can infer from our understanding of the nature of this ability that under certain circumstances it can be manifested. If we know that those circumstances do not obtain, we see that it cannot be manifested, and that other ways of telling whether he had the ability must be used. None of this entails that it must forever be unknown to us whether he had it; an undecidable sentence is not one that can never be decided, simply one for the deciding of which we have no effective method.

Dummett claims that "the thesis that counterfactuals cannot be barely true is so compelling, since we cannot form any conception of what a faculty for direct recognition of counterfactual reality would be like" (WTM II, 100). Yet it is a simple logical point that the only observers of counterfactual reality are counterfactual observers. We cannot observe what occurs in a world μ unless we exist in μ . Of course, we can suppose that μ is the world in which we do exist. So the counterfactual observers can be supposed to be us. But they are

us subject to different experiences from those we do have. So we cannot in fact observe what happens in μ unless μ is actual. Since μ is counterfactual, we cannot observe μ . The realist's talk of counterfactual or past situations does not involve him in supposing that these states of affairs do exist (actually or still exist), but simply that they would or did exist respectively. We can apply bivalence to statements about the past or about what might have happened because when it did happen or would have happened, either one thing or the other would have happened. There is no need for "ineffable faculties of intuition" with which to "apprehend" it.[4] We can only think about it, and then look for evidence - evidence that does not constitute the truth of the assertion, but is evidence for what we can only observe indirectly (as things are).[5]

This is, however, only to reaffirm realism against Dummett, and to suggest ways in which Dummett misinterprets its defence so as to mischaracterise it. What of Dummett's positive arguments, in favour of a constructivist approach? The central tenet of Dummett's theory of meaning is "that the process by which we come to grasp the sense of [undecidable] statements, and the use

---

4 M. Dummett, "The Philosophical Significance of Gödel's Theorem", Ratio 5 (1963), 152.

5 Cf. "Truth", 157-8.

which is subsequently made of these statements, are such that we could not derive from it any notion of what it would be for such a statement to be true independently of the sort of thing we have learned to recognise as establishing the truth of such statements."[6] That there is no such derivation is here merely asserted. What reason is there to believe it? An obvious derivation is to say that it is given in the logic of such statements. If we are exposed to assertions of bivalence for such statements, then we can see that they must be taken to be true independently of our ability to recognise them as such, and that this is part of the meaning of the ascriptions in the statements. Only in that way could the assertion of their bivalence be justified.

Dummett claims that this derivation is blocked by the requirement that the full language must be a conservative extension of the atomic fragment. 'Conservative extension' is here used metaphorically - it is a proof-theoretic notion, stretched, Dummett admits, to act here as an epistemic one.[7] The idea is that we can conclude as a result of inference indirectly to the truth of any atomic statement only when we could have a direct means of recognition of its truth. Only in this way can our

---

6 "The Reality of the Past", 243-4.

7 "The Justification of Deduction", Proceedings of the British Academy 59 (1973), 229.

logic be justified. And the divorce between an atomic fragment used in learning, and its embedding in a logic, derives from Dummett's view of language learning as progressive, and, a closely related point, of the theory of meaning as atomistic, requiring that the meaning of a sentence be given determinately in terms of the meanings of its constituents.

This divorce suggests an abstractionist view of meaning, and relates to Dummett's attack on holism, which will be considered later (in the fifth section). But there can be no such simple divorce between atomic constituents and their logic. Other concepts, in particular logical ones, are required for the acquisition of any single concept. Quine's network of sentences, with which Dummett makes so much play, cannot be segmented into determinate areas.[8] Just as Tarski needed infinite sequences for his recursion on satisfaction, even though any single sentence has only finitely many free variables, so holism is the reasonable claim that no finite bound can be put on that area of the language an understanding of which is interdependent with that of any single sentence. It is not "the amazing doctrine that a speaker's grasp of a language involves the simultaneous solution of the problem of attributing references

---

8 Contrary to Dummett's hope in, for example, "The Justification of Deduction", 217.

and extensions in such a way as to maximize the number of sentences which come out true."[9]

The application of the notion of conservative extension is also contentious. A standard definition would be: theory Σ_1 in language L_1 is a conservative extension of theory Σ_0 in language L_0 if, for every $\alpha \in L_0$, if $\Sigma_1 \vdash \alpha$ then $\Sigma_0 \vdash \alpha$. Now if there are undecidable atomic predicates, then Dummett is quite right to claim that we have no reason, from the standpoint of the atomic fragment, to claim that every atomic sentence is bivalent; that is, we do not know whether every atomic sentence has a truth-value. But a fundamental tenet of intuitionism rejects a many-valued interpretation: we equally cannot claim that any sentence is neither true or false. A fortiori, we have no reason to claim that any atomic sentence is not bivalent (not determinately true or false). What we learn after embedding the atomic fragment in the whole language is that every atomic sentence was bivalent - if the whole language exhibits a classical logic. And this is perfectly compatible with the situation that obtained for the atomic fragment - and would not be compatible with any claim that some atomic sentence was neither true

---

9 See S. Blackburn, Critical Study of S. Guttenplan (ed.), Mind and Language, Philosophical Quarterly 26 (1976), 360.

nor false. Thus, if the whole language does show some atomic sentence to be bivalent, that sentence was, although we did not know it, bivalent when it was part of the atomic fragment alone. Knowledge of the whole language may fail to be a conservative extension of that of the atomic fragment: with knowledge of the whole language we may know that α is bivalent, while with knowledge only of the atoms we did not. That is a perfectly acceptable situation, and one which matches how things are. For we never do have knowledge only of the atomic fragment, since abstractionism is false. To reiterate, undecidable sentences are not ones with no value (an intuitionistically unacceptable position), but ones for which there is no effective procedure for determining a value. For many of these sentences we have determined a value - non-effectively. Moreover, that value has been determined in the same way that a value is often determined for decidable sentences, not all of which result immediately from observation.

Dummett says that the correspondence principle C cannot be applied directly. The order of dependence is that we work out the conditions under which a statement is (for him) correctly assertible, and conclude from them to the constitution of reality. How will this be applied intuitionistically? For the realist, the sort of thing a statement is true in virtue of is "a fact"; for the constructivist, that in virtue of which it is

correctly assertible is "our possession of a proof".[10] For Dummett, such possession is, in general, a procedure whereby its truth can be recognised. It follows that Dummett accepts one part of realism (Platonism) which leads him to reject its full force; he takes the correspondence principle together with the empiricist construal of knowledge on an acquaintance or observational model, and this forces his acceptance of idealism. He replaces Frege's realm of reference (reality) by a realm of effective procedures, available to (quasi-perceptual) intuition. It is these intuited procedures which correspond to those sentences which are correctly assertible.

2. Epistemic terms in Semantics

Many of Dummett's reasons for embracing intuitionism derive from Frege's elucidation of the notion of sense. Dummett claims that questions about meaning are really questions about understanding, and the mediating term here is 'sense', interpreted in a strongly epistemic way. The theory of meaning is, he says, "a theoretical representation of a practical ability" (WTM I, 114, 121). He criticises Davidson for failing to see that any adequate theory of meaning is a theory about what it is to know, and what is known in knowing, the meaning of a

---

10 Dummett, "The Reality of the Past", 243.

word. To my dismay, Davidson accepts this criticism.[11]

The reason may well be that Davidson's theory of truth is so weak. As mentioned in the second chapter, among the constraints he places on its T-schemata is one that the analysans contain no semantic terms not occurring in the analysandum - the sentence whose truth-condition is being given. He therefore rejcts any Tarskian model theory, and his semantics is, in consequence, entirely translational - it consists in a deductive theory expressed in a metalanguage which simply translates the object-language.

This is to misread what Tarski did for the semantics of class logic. In Tarski's language there was only one non-logical constant, inclusion, and his expression of its semantics availed itself of a direct translation of the object-language expression 'I' into the metalanguage. But it did not avail itself of translation of the part of the object-language it was interested to elucidate - the logical expressions. Class-inclusion was simply an example. He provided an analysis of quantification (using the satisfaction-predicate) and showed how truth distributes over the logical connectives (the truth-condition for $\ulcorner A \vee B \urcorner$ is

---

11 D. Davidson, "Reply to Foster", in Truth and Meaning (see note 1), 33.

not ⌜A or B⌝, but ⌜A is true or B is true⌝). That part of the language in which we are interested (for example, valid inference) cannot be explicated by a mere translation. It can be investigated by examining the way the world would needs be for the sentences of the language to be true.

Dummett's reason for importing epistemic notions is that avoiding realism in the theory of meaning by substituting for a relational account, as Davidson does, one in terms of significance or synonymy fails to capture our intuitive notion of a capacity to grasp the meanings of the sentences of our language. "It is impossible", he says, "to explain in general what is meant by 'knowing (or learning) the meaning of a word' in terms only of the relation of synonymity" (Frege, 157).

Here again, the perceptual paradigm of knowledge misleads him. A relational account is, for Dummett, a perceptual one. For the reason he has is that sense is not something which can in principle only be "grasped" as the sense of a word or symbol. In order to leave it open that thoughts could be grasped without the need for a vehicle of thought (Frege, 156), Dummett must reject the idea of sense as (simply) the synonymy of those vehicles. I do not intend, however, to account for the language of angels; and communication by telepathy is, if not the acquisition of knowledge without any justification whatever (that is, no acquisition at

all), then merely the expression of sense by some vehicle as yet undiscovered - and open to (scientific) investigation. Understanding is not the perception or intuition of an abstract object without being also, and fundamentally, an ability to use a sign correctly. A propositional account of a practical ability is just that; it cannot then be divorced from its explanandum.

We saw in the last chapter that if one has an adequate truth-conditional semantics, that is, one which expresses the truth-condition of each sentence in terms of reference and predication, a way which is not merely its translation into another language, then one can, if one wishes, define a substantive meaning in terms of substitutivity, using a definiens without explicit commitment to intensional meaning-entities. The intensionality enters rather through the analysis of intensional predicates in terms of properties. The definiens will contain an account of reference, in the sense developed in earlier chapters (that is, a Russellian reference), by which the moderate realism required by (classical) truth will be achieved. The referents of expressions in a sentence are those things which, in the sense given earlier, they identify. The definiens will contain also an account of meaning in terms of predication, not in terms of a (quasi-)referential relation to a Fregean concept. Here predication and truth obviously lie very closely together - each is definable in terms of the

other. But not viciously so, any more than, I claimed earlier, contra Quine, meaning and synonymy viciously presuppose one another. One cannot understand what it is to predicate an expression of an object, or, in the case of an intensional predicate, of an object and a property (an individual concept), without understanding what it is for a sentence to be true, that is, what the semantic theory is a theory of. Similarly, one cannot understand what it is for two expressions to be synonymous without realising what it is for an expression to be meaningful. Yet, given that several expressions are synonymous, their meaning is the equivalence class of one of them under synonymy. And, given that an expression is predicable of such and such an object, any sentence consisting simply of this expression attached as predicate to another referring to that object is true. Such a semantic theory, lacking any epistemic terms, is a theoretical representation of epistemic abilities in the sense that the truth-condition of a sentence specifies what a speaker of the language would have to know for him to understand the sentence. For example: the truth-condition that ⌜A and B⌝ is true if and only if A is true and B is true (for any sentences A and B) is what any English speaker must know to understand the sentence ⌜A and B⌝ (that is, to understand the conjunction 'and'). I will discuss what it is to know the truth-conditions of the atomic sentences in the

fifth section.

In fact, incursion of epistemic notions in Dummett's account is no more than a *prima facie* useful dodge to intensionalise a theory of extensions - what Dummett picks out as the theory of reference. He supposes that if one has first described a language in terms of the objects denoted by the terms in it, one can subsequently move to speak of the intensions of those words by considering what it is that speakers must know, independently of any non-linguistic facts, so to denote objects and to speak truly about them (WTM II, 127ff.). What is it that a speaker must know in order that he acquire further information on learning the truth of a sentence of the truth of which he was previously ignorant? He must know its meaning. This concept of meaning is then used as the extension (Fregean referent) of certain terms in certain linguistic contexts, to intensionalise the semantics. That is, instead of using semantics to explain speaker's knowledge, Dummett uses concepts derived from speaker's knowledge in his semantics. Of course, he has reason for proceeding in this direction. I wish to argue against them, and for the opposite order of dependency.

3. Frege's Distinction of Sense from Reference: The First Argument

Dummett derives two arguments from Frege, both, he says, used by Frege to distinguish sense from reference.

One cannot, the first argument runs, attribute to the speaker of a language the knowledge simply that a certain object is denoted by a certain singular term. For the speaker must be able to identify that object, and it is the "mode of identification" of the object which the speaker matches with the term. The speaker knows, in knowing the sense of the term, that term to be connected with that specific way of identifying an object (Frege, 95-6; WTM I, 124-5; WTM II, 128).

A similar argument was launched by Frege's contemporary, Bradley, against Mill's contention that a proper name stands for something, but does not mean anything - has no connotation. Bradley claims that no sign can possibly be destitute of meaning. In order to associate the term with the object it is to stand for, it must be associated also with some qualities and characters of what it is to stand for. "If it did not to some extent get to mean the thing, it never could get to stand for it at all."[12] The argument goes further. Properly to be the sign for an object, it must be capable of being applied to the object on a succession of occasions. As such, there must be involved a means of recognising the object as the same on those occasions - there must be grounds for reidentification. These, says Bradley,

---

12 F.H. Bradley, The Principles of Logic (London, 1883/1927), 60. The argument occupies §§ 17-18.

can only be given by a set of characters which the object retains. "We could not recognise anything unless it possessed an attribute, or attributes, which from time to time we are able to identify" (op. cit., 61).

We have already noted the ambiguity in language which leads to this view. It is the ambiguity between purely referential occurrences of names, and attributive occurrences, for which a notion of content is required. Only in the former case does a name refer to the object, a notion of reference which is captured by the truth-condition for the sentence, into which the object enters directly (that is, a proposition with the object itself "in there"). Hence Russell, influenced far more, since he didn't realise it, by Bradley than by Frege, was led by Bradley's way of thinking into giving an analysis only of the attributive occurrences of definite descriptions. He did this despite his recognition in The Principles of Mathematics of a truly referential use of singular terms, one in which the semantic contribution of a term is simply and only an object, under no particular description.[13] He rejected this insight when he announced that "we must abandon the view that the denotation [that is, the object] is what is concerned in propositions

---

13 B. Russell, The Principles of Mathematics (London, 1903/37), Chs. 4-5. The later logically proper names carried on this descriptionless and direct reference.

which contain denoting phrases."[14] But it is only for attributive occurrences that the notion of meaning, or sense, is required.

Both Frege and Bradley would no doubt reply that Russell's early theory of propositions was misconceived; that there is no way in which an expression can be used to stand for an object without in any way describing it. That reply, however, ignores the essential point of distinguishing referential from attributive uses of descriptive phrases. To allow that a phrase can be used attributively is precisely to recognise that it has a descriptive role, and that this description is in such a case part of the truth-condition of the sentence in which it occurs. But to distinguish this use from a referential one is then to recognise that the expression may not be used descriptively, but may serve to provide an object for the truth-condition regardless of how described (and hence, whether or not correctly described). That is why it can stand for the object without "meaning it".

This notion of meaning as the content of an (attributively used) description is required for an adequate expression of the truth-condition itself, not simply for knowledge of that condition. Dummett speaks throughout as though in a realist account it were possible

---

14 B. Russell, "On Denoting", Mind 14 (1905), 484.

firstly to construct a theory of reference without recourse to the notion of sense. Sense, he says, is required only "to round out the theory of reference" (WTM II, 127), to specify "the application to each sentence of the central notion of the theory in such a way that the speaker will directly manifest his knowledge of the condition for its application by his actual use of the language" (ibid.; cf. Frege 90-1). The notion of sense or meaning is, however, required in the specification of the conditions under which certain sentences are true (or, for Dummett, falsified). If the language were extensional, the theory of truth could be given without recourse to a notion of meaning. But, in general, languages are not extensional. They contain opaque contexts in which truth values depend on more than just the denotations and extensions of the constituent terms. The so-called "theory of reference" cannot be elaborated prior to talk of meaning. Frege recognised this. That is why his notion of sense is dragged rudely back from being an object of knowledge to being the "referent" of certain expressions. In certain contexts, Frege claims, an embedded sentence and its constituents do not have their ordinary reference, but an indirect reference, which is their sense. A fortiori, Leibniz's law is then restricted to synonymy, since the referent is the meaning.

Even here, however, we can detect the inroads of

epistemology. Dummett says, "that the referent of a sentence is its sense when it forms a clause governed by a verb for a 'propositional attitude' ... itself requires that sense to be connected with the mode of knowledge or ground of belief" (WTM II, 134). Yet this point can give no privileged position to knowledge. Frege's solution requires that the referent be the customary sense not only when the main verb is 'know' or 'believe', but equally when it is 'doubt' or 'deny', and when it is not epistemological at all, for instance, 'it is necessary that ...'.

To provide senses of expressions simply as the referents of expressions in opaque contexts, Dummett calls a very bad answer (Frege, 90). Opaque contexts, he says, provide in themselves no arguments for sense. To use the notion of sense or meaning to analyse opaque contexts, we first need, he says, independent evidence that a notion of sense is necessary for an account of expressions in ordinary contexts. Let me take the opportunity here first of all to clarify a difference in terminology. Dummett and Frege have, at the outset, an essentially denotational semantics. For singular terms, Frege's Eigennamen, Frege's reference matches what I have called 'denotation'. The denotation I defined for predicate expressions matches the extension of the concept which Frege takes as the referent of the predicate. But concepts are extensional. They do not,

as the account of properties in the last chapter did, provide for intensional contexts. Concepts are identical (Frege says they "have that relation of second-order which corresponds to identity for objects") if and only if their extensions are the same. A concept and its extension lie so closely together that little is lost (if we are careful, for example, in applying the point to opaque contexts) by comparing Frege's referent for predicate expressions to the present (Russellian) notion of denotation.

Dummett, however, wishes to maintain that a referential (that is, denotational) semantics can stand on its own. A classical theory "issues in a specification for each sentence of the condition under which it is true" (WTM II, 127). Yet he claims that such "a theory of truth" in many cases "fails to display in what the speaker's implicit knowledge of it consists" (ibid.). A theory of sense is required to round out the theory of reference. In particular, "it would be useless" to explain opaque contexts in terms of sense "unless it had first been established that there is something which, in ordinary contexts, constitutes the sense of a term" (Frege, 90).

We need here to disentangle those two elements of the notion of sense which we saw in the last chapter Frege brings together. On the one hand, the notion of content, which led to my account of meaning, involved

in the predicative uses of expressions, and on the other, the epistemic meaning of the word 'sense', involved in the notion of use, which is intended to capture what anyone who can use the expression must know. It is precisely the opaque contexts of propositional attitude which led Frege to conflate these, to suppose that the information content of a true predication is to be identified with what someone knows, in the sense of an intellectual - albeit public - object of thought, if he knows how to use the expression.

The essential point we must realise is that the fact that the denotation of an expression is not always sufficient for the adequate statement of the truth-condition of sentences in which that expression occurs, a fact which forces the recognition of a further aspect of the term by which it can be said to ascribe to its <u>denotatum</u> a certain set of properties (whether or not these properties are, in fact, used to reidentify that object), does not show that this further aspect, its sense or meaning, is an object of knowledge, or in any intrinsic way the component of a theory of understanding. Adequately to state the truth-conditions of sentences, we <u>do</u> need to provide intensions of expressions as their (Fregean) referents, that is, their semantic import, and this simply for semantic reasons. Opaque contexts are as ordinary as transparent ones.

In particular, a theory of meaning will contain no

psychological terms. It will in no way explicitly talk of a speaker's knowledge. That is the sort of mistake which lies behind mentalism in linguistics, to suppose, for example, that the explanation of how we express thoughts in language is "to set up a model of the human mind in which thoughts are accounted for in a satisfactory way; the connection would be between deep structures and thoughts."[15] On such a view the deep-structure difference between, say, referential and attributive uses of definite descriptions could be given by a difference in the (perhaps causally operative) thoughts of the respective speakers. Such a way of drawing the distinction is not what semantics requires (or allows), whether or not it is the case that the utterers of the sentence with these different uses must (or could) be thinking differently.

How a speaker recognises an object as the (Fregean) referent of an expression is not relevant to the truth-condition of a sentence in which that expression is used referentially. It is (indirectly) relevant to predicative uses. But only in the sense that to use language to assert truths a speaker must know what to predicate truly of what. The order of explanation lies in that direction. Frege's argument perhaps shows that anyone

---

15 P.A.M. Seuren, Operators and Nucleus (Cambridge, 1969), 87.

who identifies and picks out something knows what he has referred to by identifying it for himself as falling under some description. It does not show that semantics and the truth of sentences need take account of this. In particular, anyone who refers to something, predicates something of what he has referred to independently of whether the phrase referring to it truly describes it.

4. The Second Argument

Frege's other argument for the sense/reference distinction is concerned with knowledge and information. In order for a person to acquire further information and knowledge from learning the truth of a sentence previously unknown, he must have some prior knowledge, namely, knowledge of its meaning. Frege's famous application of this point is to identity statements. The referent of the parts of a true identity statement is an object, the referents of a false one are two objects. If the information content of each term were simply its referent, one could not distinguish knowledge of its meaning from knowledge of its truth. But one can know the meaning of each term, and so know what is meant by identifying their referents with one another, without knowing whether their referents are indeed identical (Frege, 94-5; WTM I, 125-6; WTM II, 128-9).

Dummett presents Frege's argument as relying on

the premise that, if one knows the senses (information content) of two terms, and those senses are the same, then one must realise this. It follows, he says, that the information content cannot be the referents (which are, if it is true, identical), but some other elements (the senses), which are not, in general, identical.

Certainly, Dummett's view of knowledge as a relation of acquaintance, which we noted earlier, and which gives credence to Dummett's premise, is very present in Frege's reasoning. Frege has, after all, been accused of being a Platonic realist. However, Frege's argument seems rather to be as follows. We firstly distinguish knowledge of a sentence's meaning from knowledge of its truth. If the meaning of a term is the object it denotes, then knowing the meaning of the term requires direct acquaintance with the object (not under any particular "mode of presentation"). The essential presumption is that knowledge (in particular, knowledge of meaning) is immediately to grasp (erfassen) the object of that knowledge (the meaning). It is direct or immediate in being mediated by no particular "mode of presentation". It follows, and is not simply an assumption, that if the meaning of two terms is the same, namely, the object each refers to, then one has grasped just the same thing. There would be nothing more to be informed of, to grasp, by a statement of identity formed from the two terms. Knowledge of truth would collapse into knowledge of

meaning; once we knew the meaning, we would know whether it was true. Hence the assumption, that the meaning is the referent, must be wrong. The meaning is, rather, the "mode of presentation" (die Art des Gegebenseins) - the way in which the object has been given or grasped. These modes of presentation, by which the referential relations of two coreferential signs to their common referent can be distinguished, are taken to be the senses of the signs. As the information content of the signs, from which the information content of the whole sentence is compounded, it is taken to be the object of knowledge of everybody who understands them.

Seen in this way, distinguishing meaning from fact, the argument reaffirms the analytic/synthetic distinction. Well and good. We should realise, however, that it already presupposes that what we are speaking of is a person's understanding and knowledge. It says merely that, given that sentences are operative in changing a person's knowledge, there must be some core knowledge which is unchanged in the process. This may well be true. But it doesn't show that a theoretical representation of what it is the speaker knows need contain any epistemic terms, such as 'sense' (with the epistemic interpretation), or 'verification'.

Recall that in the fifth chapter, I claimed that an identity statement is true if and only if the same object is picked out by each term, but that how an

object is picked out is not part of the semantic import of the referential use of the terms. The semantics abstracts from the (pragmatic and contextual) exigencies of the picking-out procedure. Have I simply swept Dummett's conclusions about knowledge of the meaning of a term being more than just bare knowledge of its referent under the carpet of pragmatics? I think not. For knowledge of the language does not require the ability always to be able to identify (or have a procedure for identifying) the referent of a referentially used term. That knowledge requires an understanding of what it is to refer to something, and both of what it is to predicate something of it, and of what is predicated, that is, of when it would be truly predicated. It does not require knowledge of what is, in fact, referred to.

When viewed in terms of a speaker's knowledge of the language, it becomes rather odd to speak of the meaning or sense of (real) proper names. Consider Dummett's example of the names 'Afla' and 'Ateb' (Frege, 97). Someone may know that Afla can be described from one point on the southern horizon, and that Ateb can be seen from another in the northwest. It may be a third, useful piece of information that these two, paradigmatically context-dependent, means of identification pick out the same mountain. But a person's ability to pick out, say, Ateb, can hardly be called part of his knowledge of, say, English. Does someone who does not know that

'London' refers to London - in the real "full-blooded" sense of knowing which city 'London' refers to - not know English (fully)? Or that 'Oxford' refers to Oxford? Or 'Islip' Islip? Or 'Noke' Noke? ...

That is why proper names are the paradigmatic referring expressions. Most of them are not available for any predicative use. When other nounphrases, such as definite descriptions, are used like them (referentially), then likewise their (predicative) content, their meaning, is not part of the sentence's truth-condition. It is not the fact that the theory of meaning must encapsulate what a speaker of the language must know to be such a speaker which forces the recognition of a meaning for expressions. A semantic notion of meaning is not forced by the notion of information content. As stated earlier, in the absence of intensional predicates, semantics could be formulated in terms of reference and denotation, and we could, nonetheless, ask what knowledge the semantics yields. What does require a meaning for expressions is their use in opaque contexts. Opacity is not a bad answer to querying the need for sense. It is the only answer.

So, if it were significant to place a proper name in an opaque context in such a way that substitution under identity salva veritate were not possible, a meaning, that is, an attributive use, of that name would be required. We have been told, for example, that Ralph

did not realise that Cicero was Tully. Only a propositional, notional, or opaque (non-substitutive) interpretation of this is sensible. It seems to me, however, that it makes sense only as asserting that, say, Ralph did not realise that Cicero was also called 'Tully' (or vice versa). Here there is a predicative phrase, 'was called 'Tully' ', the meaning of which is part of English, and does not involve the meaning of 'Tully'. That part of English, the meaning of 'was called 'Tully' ', is something which Ralph should know. He can know this without knowing of whom it is truly predicated. Such an example does not, therefore, show that proper names have meaning.

Frege's second argument serves only to show that Frege viewed knowledge as a sort of perception or acquaintance, and that he accepted the analytic/synthetic distinction. That we know. It does not show that the concept of meaning as what someone knows in understanding the language is prior to its use as a concept in semantics in detailing the truth-conditions of sentences. Indeed, the order of priority is exactly the reverse. A notion of meaning is required for the adequate statement of the truth-conditions of the sentences of a language. Knowledge of those truth-conditions is required of anyone professing to understand the language. Hence, understanding the language necessitates knowing the meaning of its expressions.

5. Semantics and Understanding

Thus semantics, what Dummett calls the theory of meaning, can be erected as a theory which gives a systematic account, for each sentence of the language, of the conditions under which it is true. The semantic notions required for this are reference, which constitutes the link with what is talked about, and meaning, which at the basic level elaborates the descriptive role of language. At the basic level, something is picked out to say something about, and something is said about it - it is described. These two concepts are then extended to more complex uses of language.

Yet Dummett will still say that such a theory can neither be systematic, nor will knowledge if it, since it contains no epistemic terms, constitute an understanding of the language.

It cannot be systematic, he says, because it is holistic, and a holistic theory is anti-systematic. "Any systematic account of the use of a whole language" must "yield an account of the significance of individual utterances" (WTM I, 115). A theory which simply yields T-schemata does not provide this, he says, since the terms in the truth-condition, belonging to the meta-language, gain their meaning only holistically, from the uses in sentences to which they can be put. Hence such a theory would not, Dummett claims, enable anyone

"to use the theory of truth in order to obtain an interpretation of the object-language" (WTM I, 114).

Such a criticism mistakes the whole purpose of a semantic description of language and the role of the metalanguage. The point has arisen a couple of times in previous chapters. We saw, for example, how the truth-condition for ⌜A is B⌝ in which A and B occur referentially and refer to m and n respectively, is that ⌜A is B⌝ is true if and only if m = n. Here the expressions 'm' and 'n' occur in the metalanguage, and it might be asked whether they occur here referentially or attributively. It is only by understanding the way the metalanguage is constructed, namely such that names occurring in these places in the truth-conditions, that is, on either side of the "identity-sign", are to be used referentially, that that query can be answered. We write the copula as '=' in order to show that the succeeding expression is referential; nothing in the T-schema itself answers it. The point of the semantic theory is certainly not to provide someone with no knowledge of the metalanguage with an understanding of the object-language. Yet neither is it designed to provide someone who does know the metalanguage with an understanding of the object-language. There are much more efficient ways of doing that. It is set up to provide an understanding not of the language, but of how certain features of the language work, to provide an analysis of

reference, meaning, quantification, negation, logical relations, and so on. That is why it is very seldom articulated in any detail.[16] In principle, it must be possible to complete it. That is the constraint on any single solution to one of these quests for analysis. An account of, say, reference fails if it demands of the rest of the theory of language a structure impossible of realisation. Once, however, we have satisfied ourselves that a solution does not have such a consequence, we do not need to spell out the detail. What we want is an account of what it is to refer to something, what it is to predicate one thing of another, what it is for a sentence to be true, and so on. As each of these is answered, the results must build up into a coherent structure.

This conception of a theory of meaning (a theory of the language) differs radically from Dummett's. For Dummett requires "a detailed specification ... of the meaning of every expression and sentence of the language" (WTM I, 97). But the semantics does not specify the meaning of individual expressions. It uses the meaning of expressions to state the truth-conditions of the sentences in which they occur. So in that (weak) sense, it does not specify the meaning of the sentences either. Part of knowing the meaning of an expression

---

16 Cf. Frege, 106-7.

is being largely right in applying it to objects. In other words, if most of the sentences containing the word which one utters are false, an obvious explanation is that one is mistaken as to the meaning of the word. In any particular case, there may well be competing explanations. But the semantics does not say which sentences are true, which false. It gives the conditions for their truth. So knowledge of the semantics alone is not sufficient for a knowledge of the language. One must also know the meanings of the primitive terms. That knowledge is not propositional, or verbalisable, but an ability (to use them, largely, correctly). Knowledge of the semantics of a language is but a necessary condition of knowing the language. It cannot be used, holistically or otherwise, as a language primer. A theory of truth-conditions is not holistic.

Dummett draws a disanalogy between the theory of knowledge and the theory of meaning (ibid.). "No one", he says, "has proposed that the right way to go about tackling philosophical problems relating to the concept of knowledge would be by considering how one might construct a theory of knowledge in the sense of a detailed specification of everything that any one individual, or community, can be said to know". The reason is not that, as he suggests, our understanding of knowledge is more secure than our understanding of meaning. It is that such a catalogue would not explicate the concept of

knowledge. No more would a catalogue of meanings explicate the concept of meaning.

What, however, of the second point, that simply to know a theory of language which itself contains no epistemic terms, cannot constitute an understanding of that language? We see that this is also answered in realising that no theory can provide verbal definitions of its own terms. If we want to understand how English works, we can describe this in English (pace the semantic paradoxes). If we give a homophonic account, we explain nothing, though, as we saw in the second chapter, the homophonic truth-condition does place a condition of material adequacy on the theory. If we introduce semantic notions like reference, meaning, predication, truth, we may succeed. If we require an account of the meanings of the constituent words, not of how English works in combining those primitives into truths and falsehoods, we can provide a translation-manual into another language whose primitives are presupposed, or we can eschew a theory of their meaning - a description of it - and turn to linguistic behaviour, talking the language in context. The former method is commonly known as second-language learning, the latter as first-language learning. Neither, it seems to me, is what a philosophical theory of meaning is concerned with. We require an explication of the concept of meaning, and that is given by an account of syntax (grammaticality)

which acts as input to a theory of truth-conditions.

Reference picks out and provides an object, directly, without connoting any particular way of giving. Meaning permits one to say something about it, to ascribe properties to it, to predicate. And finally, truth divines whether one is right in what one says.